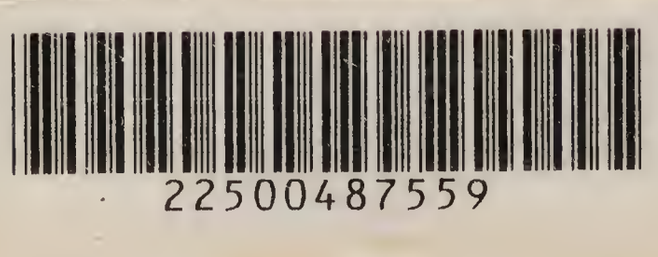
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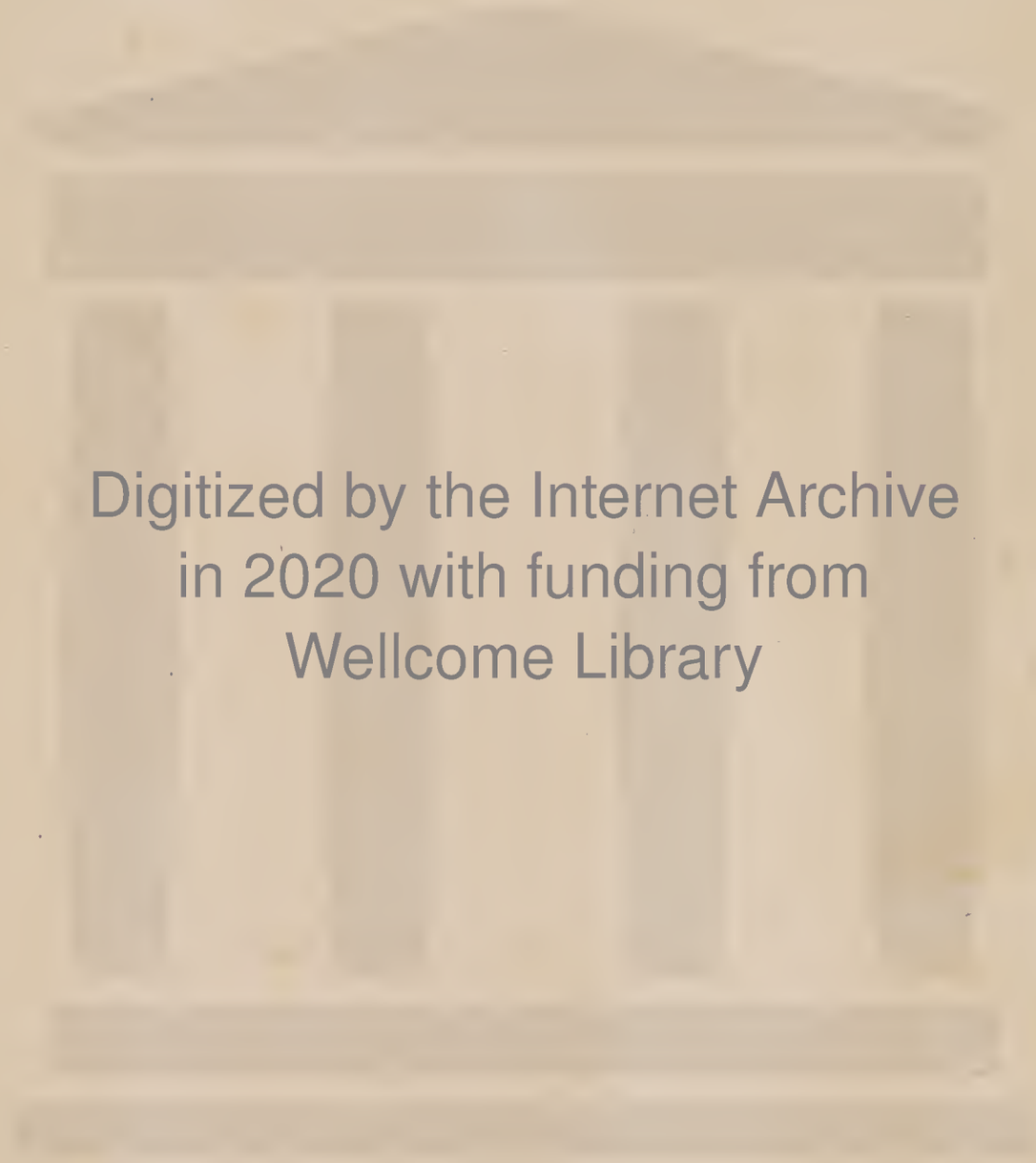

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Boilers, Steam	J. H. Ames	46,203
Boilers, Steam	E. B. Sintzenich	46,533
Boilers, Steam	E. Reynolds	47,130
Boilers, Steam	C. T. Boardman	47,790
Boilers, Steam	T. Main	47,968
Boilers, Steam	H. Gerner	48,805
Boilers, Steam	T. J. Jones	48,870
Boilers, Steam	D. Lister	49,125
Boilers, Steam	W. M. Storms	49,199
Boilers, Steam	T. W. Pratt	50,161
Boilers, Steam	H. Hinkley	51,046
Boilers, Steam, Closing hand-hole plates in	J. R. Taylor and H. A. Towne	49,170
Boilers, Steam, Ejector for	S. Maltby and C. Osborn	50,205
Boilers, Steam, Feed-water heater for	W. A. Lighthall	46,252
Boilers, Steam, Hydrocarbon blowers for furnaces of	H. Gerner	48,806
Boilers, Steam, Incrustation in, Preventing	G. T. Barry	50,773
Boilers, Steam, Incrustation in, Preventing	A. F. Porter	50,774
Boilers, Steam, Incrustation in, Preventing	W. Brown	51,775
Boilers, Steam, Low-water indicator for	G. A. Riedel	47,365
Boilers, Steam, Scale in, Preventing and removing	J. Buzby	47,794
Boilers, Steam, Scale-borer for	C. H. Keener	49,416
Boilers, Steam, Sectional	L. J. Gold	51,448
Boilers, Steam, Sediment-extractor for	E. Thayer	47,232
Boilers, Steam, Setting	J. Chilcott	50,221
Boilers, Steam, and welding-furnace, Arrangement of	H. J. Davidson	50,562
Boiler, Sirup, and evaporator	L. Thomas	50,644
Boiler feeders	J. W. Bishop	47,180
Boiler feeders, Automatic	J. W. Bishop	47,182
Boiler feeders, Automatic	J. N. B. Bond	47,791
Boiler feeders, Automatic	R. Rafael	49,919
Boiler feeders, Automatic	S. Driver	49,949
Boiler feeders, Automatic	G. A. Riedel	50,034
Boiler feeders, Automatic	G. A. Riedel	50,035
Boiler feeder, Steam	C. H. Prentiss	51,392
Boiler flues, Cleansing	J. M. Spiegle	51,362
Boiler flues, Scale from, Removing	P. E. Garvin	49,255
Boiler tubes, Cleaning	J. J. Illingworth	48,948
Boiler tubes, Cutting off, Tool for	D. A. Dacey	48,054
Boiler tubes, Fastening	R. McConnell	49,287
Boiler tubes, Ferrules for	G. W. Durall	49,987
Boiler tubes, Scaling	J. Werner	49,327
Boilers for steam heating	H. Howard	48,067
Boilers for treating straw	T. A. Nixon	50,266
Boilers and condensers, Packing for tubes of	J. Newkirk	49,295
Boiling water, Apparatus for	H. W. Horton	50,586
Bolts	W. J. Lewis	47,113
Bolts, Carriage	A. Pond	47,245
Bolts, Cutting	J. F. Rogers	51,355
Bolts, Door	A. Westcott	46,740
Bolts, Door	M. M. Gonnigle	48,297
Bolts, Door	W. H. Heart	48,555
Bolts, Door	C. Chevallier	49,085
Bolts, Door	J. E. Parker	49,296
Bolts, Door	W. H. Heart	50,120
Bolts, Door	A. P. Floyd	51,034
Bolts, Drawing by hydraulic pressure	S. Wilmarth	45,785
Bolts, Heading	F. Watkins	46,434
Bolts, Making	C. Lusted	49,902
Bolts, Shutter	D. E. Heller	45,712
Bolts, Shutter	E. Andrews	45,963
Bolts, Screw, for fastening railroad chairs	R. J. Dewhurst	48,531
Bolts, Stay and other, Cutting off	J. Renshaw	46,703
Bolts, Threads on, Cutting	W. W. Hubbard	49,524
Bolt catch, Spring	G. M. Morris	47,741
Bolt-heading machine	E. Kaylor	50,599
Bolt-heading machine	F. Schweizer	50,848
Bolt machine	A. Alexander	49,484
Bolt machine	E. Kaylor	49,532
Bolt machine	A. Marcellus	49,638
Bolt-screwing machine	A. Babbett	51,538
Bolts for doors and shutters	J. Feldman	46,891
Bolts for flouring mill	S. Godfrey	50,466
Bolt and latch	M. J. Meyer	50,260
Bolting apparatus	H. B. Goodyear	46,658
Bomb lance for killing whales	S. Barker	46,437
Bomb lance for killing whales	E. Pierce	49,548
Bonnets and Hats, Pressing	H. E. West	49,048
Bonnets and Hats, Embossing	H. E. West	49,049
Bonnet binding	J. L. Weaver	46,163
Book covers	J. W. Harrison	46,353

Invention or Discovery.	Name of Patentee.	No.
Book covers	G. F. Barden	49, 213
Book-stand holder	W. W. Marston	49, 639
Boots	E. D. Coffee	49, 723
Boots, Device for pulling on	F. H. More	47, 847
Boots, Gaiter	S. Babbitt	46, 622
Boots, Gaiter	T. Powell	50, 030
Boots, Ladies'	H. W. Libby	48, 188
Boots, Pattern for cutting	A. D. Drew	47, 623
Boots and Shoes	B. D. Godfrey	47, 010
Boots and Shoes	G. P. Clark	47, 521
Boots and Shoes	T. H. Reed	47, 859
Boots and Shoes	E. Chesterman	48, 368
Boots and Shoes	T. D. Ballou	48, 614
Boots and Shoes	I. T. Jones	49, 118
Boots and Shoes	D. Read	50, 163
Boots and Shoes	J. L. Newton	50, 487
Boots and Shoes	O. Lafreniere	51, 195
Boots and Shoes, Cleaning	T. C. Andrews	48, 864
Boots and Shoes, Constructing	L. R. Blake	47, 696
Boots and Shoes, Heels of, Shaping	J. E. Belser	51, 254
Boots and Shoes, Heels and toe plates for	I. E. Loughborough	47, 115
Boots and Shoes, Insole for	J. K. Gittens	49, 874
Boots and Shoes, Lining for	J. Adams	49, 946
Boots and Shoes, Nailed	L. R. Blake	49, 219
Boots and Shoes, Soles for	J. Chilcott	47, 930
Boots and Shoes, Soles for	S. J. Seely	49, 795
Boots and Shoes, Soles for, Cutting	J. H. Walker	49, 181
Boots and Shoes, Soles for, Cutting	J. H. Walker	49, 572
Boots and Shoes, Soles for, Securing	J. Blakeney	47, 085
Boots and Shoes, Uppers for, Cutting	P. Jackson	50, 360
Boots and Shoes, Uppers of, Holding	E. M. Dickinson	47, 191
Boots and Shoes, Wooden-soled	J. Fulton	50, 236
Boot and shoe holder	J. Ellison	48, 801
Boot and shoe pattern	N. Silvester	50, 043
Boot-blacking case	F. G. Harding	48, 931
Boot crimp	A. and G. W. Caywood	50, 904
Boot-crimping machines	J. D. Batchelor	50, 780
Boot-cutter machine	J. Brooks and C. F. Sylvester	48, 651
Boot drawer, pantaloon guard and spur carrier, Combined	E. P. Walton	45, 776
Boot heel	E. Dunbar	48, 266
Boot heel	F. L. Haywood and P. Stone	48, 682
Boot heel	E. Newhall	50, 026
Boot leg	A. P. Nash	47, 743
Borer, Well	G. L. Witsill and E. Burk	46, 577
Borer for wells	J. Greeves	48, 809
Borer for wells	T. J. Lovegrove	47, 599
Borer for wells	T. J. Lovegrove	47, 600
Boring apparatus	S. R. and W. S. Hunter	47, 727
Boring apparatus for artesian wells	J. Thacker	50, 643
Boring apparatus, Oil	L. Atwood	47, 609
Boring apparatus, Well	C. E. Foster	46, 844
Boring apparatus, Well	T. J. Parke	50, 881
Boring artesian wells	W. A. Fisher	48, 388
Boring artesian wells	T. J. Lovegrove	48, 343
Boring braces	J. A. and H. A. House	49, 758
Boring gin	J. Slusser	47, 993
Boring machines	J. Vandyke	49, 060
Boring machine	D. Stanley and G. Johnson	49, 933
Boring machine for artesian wells	G. W. Wicks	48, 004
Boring tools	M. Joy	49, 277
Boring tools	W. Broadhead	49, 336
Boring tools, Coupling shafts for	R. H. Lecky	47, 554
Boring tools, Coupling shafts for	J. N. Bolles	47, 613
Boring tools, Coupling shafts for	A. A. Wilson	47, 907
Boring tools for artesian wells	H. H. Daniels	47, 804
Boring tools for artesian wells, Operating	J. Ross	50, 777
Boring wells	L. Holmes	47, 724
Boring wells	W. Hyde	47, 729
Boring wells	J. Y. Smith	47, 868
Boring wells	H. Howson	47, 897
Boring wells	W. H. Bechtel	48, 012
Boring wells	M. Campbell and J. H. Cole	48, 515
Boring wells, Apparatus for	H. Howson	46, 849
Boring wells, Device for	J. Donnell	47, 400
Boring wells, Devices for	A. A. Wilson	47, 249
Boring and drilling machine	H. Haupt	47, 819
Boring and extracting coal	A. Buchanan	48, 258
Bosoms and collars, Shirt	C. E. Richards	49, 039
Bottle	C. W. Cahoon	51, 141
Bottle	C. W. Cahoon	51, 142
Bottles, Closing	R. Robinson	46, 864
Bottles, Closing	J. Mathews, jr	48, 822
Bottles, Filling	J. Mathews, jr	50, 832
Bottles, frames, &c., Composition for	J. T. Peet	49, 147

Invention or Discovery.	Name of Patentee.	No.
Bottles, Mucilage, Top for	J. W. Broughton	48,508
Bottles, Opening	J. Mathews, jr	48,422
Bottles, Opening	J. Woolaver	50,868
Bottles, Siphon	G. W. Doty	47,705
Bottles, Washing	J. Mathews, jr	49,538
Bottles for oil	C. W. Cahoon	46,214
Bottle stopper	E. D. Moyer	48,300
Bottle stopper	W. Kloenne	48,341
Bottle stopper	R. T. Osgood	49,144
Bottle stopper	G. R. Wilmot	49,671
Bottle stopper	F. Schlich	49,793
Bottle stopper	C. Goldthwait	49,996
Bottle stopper	J. A. and G. E. Woodbury	50,063
Bottle stopper	T. B. Way	50,864
Bottle stopper	J. Woolaver	50,867
Bottle and Lamp Chimney, Cleaning	J. T. Walker	49,458
Bow pin for ox yokes	O. O. Woodruff	47,149
Boxes	W. T. Slocum	48,031
Boxes, Ballot	J. A. McPherson	46,012
Boxes, Blacking	J. H. Doughty	46,783
Boxes, Blacking	G. W. Bentley	47,676
Boxes, Blacking	J. S. Brooks	49,224
Boxes, Cartridge	W. Rosseter	49,304
Boxes, Cartridge	A. D. Laidley	49,420
Boxes, Cartridge, revolving	C. Howlett	49,523
Boxes, Check, Conductors	T. W. Knox	47,646
Boxes, Crank-pin	T. Welch	49,185
Boxes, Fare	A. H. Bugher	49,078
Boxes, Fare	A. H. Bugher	49,079
Boxes, Fare	A. H. Bugher	49,080
Boxes, Fruit	E. Morris	45,848
Boxes, Fruit	E. Morris	49,908
Boxes, Grape	O. Mallory	48,192
Boxes, Journal	M. J. Rice and W. H. Millen	46,823
Boxes, Journal	M. J. Rice and W. H. Millen	49,591
Boxes, Journal	J. T. Bruen	50,445
Boxes, Journal	T. Hill	50,477
Boxes, Journal, Lining	P. S. Devlan	51,700
Boxes, Journal, Lining	P. S. Devlan	51,701
Boxes, Journal, Lining	P. S. Devlan	51,702
Boxes, Journal, Lubricating	J. F. Light	50,143
Boxes, Journal, Lining, Composition for	P. S. Devlan	49,509
Boxes, Journal, Railroad	A. B. Nimbs	50,771
Boxes, Journal, Railway	R. C. Wright	49,022
Boxes, Journal, Railway	R. C. Wright	50,982
Boxes, Lubricating the packing and stuffing of	I. B. and W. H. Miller	47,170
Boxes, Lunch	J. F. Morgan	47,559
Boxes, Manufacture of	F. W. Fliedner	46,097
Boxes, Metal	W. T. Slocum	47,606
Boxes, Metal, Sheet	G. Anderson	47,689
Boxes, Metal, Sheet	G. W. Bentley	47,892
Boxes, Metal, Sheet	D. Crook	50,226
Boxes, Metal, Sheet	W. Wilson, jr	51,657
Boxes, &c., Material for making	W. Painter	45,950
Boxes, Opening, Tool for	E. C. C. Kellogg	47,899
Boxes, &c., Opening, Tool for	E. Hambuger	50,820
Boxes, packages, &c., Manufacture of	H. Everett	47,532
Boxes, Packing, Metallic	H. L. Hopkins	48,686
Boxes, Paper	J. W. Millet	47,069
Boxes, Paper, Making	T. C. Luther	48,490
Boxes, Pasteboard for, Cutting	E. E. Clark	46,522
Boxes, Pasteboard for, Cutting	E. E. Clark	46,604
Boxes, Pepper	A. H. Newton	50,727
Boxes, Stuffing, for steam engines	V. Duterne	50,541
Boxes, Thread and needle	H. Babcock	46,868
Boxes, Wood and paper	D. M. Smyth	50,504
Boxes, Wooden, Paper covered	M. P. Dorsch	46,221
Boxes, cases, &c., Air-tight	J. G. Staunton	45,766
Boxes and Cans, Metal	H. Everett	47,939
Boxes for hats and bonnets	O. A. Dailey	46,782
Boxes for transporting plants	F. F. Wardwell	47,234
Boxes for packing eggs	E. M. Coombs	50,341
Boxes for shafting	J. Sparrow	50,745
Box covers for exhibition of samples	C. O. Crosby	48,794
Box opener	M. D. Lawrence	50,303
Braces and shirt, Combined	W. H. Towers	50,289
Braces for carriage springs	C. C. Gleason	50,114
Bracket	M. H. Matsinger	48,420
Bracket, Eave-trough	W. Yapp	49,466
Bracket for shelves	C. F. Kuhnle	49,419
Braiding machine for covering skirt and other wires	O. R. Burnham	47,487
Brakes, Air, for cars	L. H. Dwelley	51,158
Brakes, Car	I. M. Collins	46,642

Invention or Discovery.	Name of Patentee.	No.
Brakes, Car	C. H. Gustin	48,810
Brakes, Car	W. L. Burt	49,082
Brakes, Car	S. R. Dimmock	49,243
Brakes, Car	W. W. Todd and J. Vandercar	50,051
Brakes, Car	H. H. Trenor	50,517
Brakes, Car	L. McCambridge	51,204
Brakes, Car, Automatic	J. Hartman, jr	51,715
Brakes, Car, Block for	B. DeVont	51,298
Brakes, Car, Railroad	J. H. Champlin	45,975
Brakes, Car, Railroad	J. W. Latcher	46,366
Brakes, Car, Railroad	D. L. Cross	47,091
Brakes, Car, Railroad	A. F. M. Crone	47,440
Brakes, Car, Railroad	E. E. Canda	47,700
Brakes, Car, Railroad	J. Jones	49,885
Brakes, Car, Shoe for	O. H. Sollers and J. Rhoades	51,093
Brakes, Collision	C. B. Guy	46,662
Brakes, Safety, for horse powers	J. C. Bird	45,959
Brakes, Self-acting	C. A. Smith	51,232
Brakes, Steam, for railroad cars	S. N. Goodale	47,943
Brakes, Wagon	F. L. Tripp	46,834
Brakes, Wagon	W. Glaze	48,169
Brakes, Wagon	N. Lezat	49,771
Brakes, Wagon	A. B. Mattoon	50,145
Brakes, Wagon	J. F. Wilson	50,762
Brakes, Wagon	G. and W. Burch	51,684
Brakes, Wagon and Carriage	L. R. Carpenter	45,699
Brakes for carts	H. Holcroft and C. S. Smith	50,248
Brakes for horse-powers	W. F. Rundell	50,277
Brake shoes, Car	S. D. Daufield	50,656
Brazing brass screws to iron pipes	W. B. Scaife	46,395
Bread, Aerated	J. Dauglish	48,534
Bread, Manufacture of	J. G. Moxey	51,659
Bread-slicer	G. Hall	47,716
Break, Sled	L. H. Thomas	49,173
Breast pads, Ladies'	J. A. Mason	45,843
Breech-strap fastening	A. W. Olds	49,143
Breweries, Cooler for	A. Hammer	47,298
Brewers, Mash-tun for	B. G. Martin	51,518
Brewing, Process for	A. Hammer	47,114
Brewing and distilling, Closing and condensing apparatus used in.	D. E. Somes	46,594
Bricks, Making	J. F. Schuffenecker	46,273
Bricks, Moulding and pressing	J. Treadway	46,956
Bricks, Pressing	J. K. Lemon	47,209
Bricks, Pressing	M. Chittenden	50,333
Bricks, Scouring	J. Valentine	50,862
Brick kiln, Circular	F. E. Hoffman	48,244
Brick machine	J. Ward	46,055
Brick machine	W. A. Horsall	46,188
Brick machine	J. T. Smith	46,399
Brick machine	J. George	46,845
Brick machine	H. Martin	48,419
Brick machine	C. P. H. Capron	49,376
Brick machine	J. Morley	49,430
Brick machine	S. Shreffler	49,562
Brick machine	J. Gregg	50,070
Brick machine	J. Hotchkiss and E. Buss	51,050
Brick machine, Duster for	C. Chambers, jr	45,974
Brick and tile machine	B. F. St. John and H. Horst	50,508
Bridges	J. Boles, jr	47,920
Bridges	J. Boles, jr	48,013
Bridges	J. E. Kauser	50,827
Bridges	R. Lockwood	51,328
Bridges, Iron, Wrought	J. H. Linville and J. L. Piper	50,723
Bridges, Trestle	A. Derrom	48,530
Bridges, Trusses for	W. Batchelder	48,643
Bridles	S. B. Hartman	50,822
Broiler and toaster	T. C. Law	51,064
Broiler or toaster, Wire	H. A. Hildreth and W. J. Johnson	47,302
Broom	O. W. Kellogg	46,678
Broom	J. M. Clark	47,799
Broom	J. H. Mumma	51,074
Broom	J. and G. Bacon	51,127
Broom	D. Young	51,253
Broom and brush	M. L. Byrne	51,423
Broom or brush head	J. E. Phillips	48,587
Broom and mop head	E. J. Green	50,353
Broom clasp	S. Parr	51,614
Broom head	C. E. Miller	48,195
Broom head	F. C. Bolender	48,232
Broom head	C. B. Hand	48,392
Broom head	T. H. Powers	48,434
Broom head	J. D. Browne	50,554
Broom head	J. A. Miller	50,610

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Broom head	J. Buehanan	51,013
Broom head	G. W. Hoffman	51,318
Broom head	S. D. Thurston	51,631
Broom head	C. E. Miller	51,658
Broom head	A. Silvers	51,663
Broom head	D. J. Brougher	51,689
Brush	A. M. White	47,157
Brush	A. Alden	47,781
Brush	A. Van Dusen	49,457
Brush, Dusting	C. M. Moody	47,318
Brush, Fly, for tables	H. Fisher	50,926
Brush, Hair	J. Mayer	48,295
Brush, Hydraulie	T. Welham	46,167
Brush, Mueilage and marking	E. H. Boswell	49,072
Brush, Paint	L. P. Faught	50,067
Brush, Whitewash	W. B. Burtnett and J. P. MeIntosh	45,907
Brush, Whitewash, Handles to, Attaehing	W. B. Burtnett and J. P. MeIntosh	50,449
Brush, Whitewash, and handle attaehment	W. B. Burtnett and J. P. MeIntosh	47,927
Brush and broom	M. L. Payne	51,423
Brush or broom head	J. E. Phillips	48,587
Brush and dust pan	C. H. Parker and G. Burnham	48,582
Brush and dust pan	C. H. Parker and G. Burnham	50,270
Brush for cannon	P. Birehmeyer	46,441
Brush for eleaning metallic plates	E. A. Harvey	49,755
Brush mop, Scrubbing and wringer	L. Frey and J. Hahn	50,701
Brushing hair, Barbers' apparatus for	C. P. Kroll	49,893
Bueket, Elevator	J. Magee	51,603
Bueket, Folding	H. W. Wileox	46,168
Buekets, Weighing	D. D. Stell	45,873
Bucket ear	L. Rowland	47,573
Buekles	J. Barrister	46,324
Buekles	J. Barier	46,326
Buekles	C. Sears and T. Townsend	46,948
Buekles	C. E. Woodman and C. B. Hatfield	47,159
Buekle	J. E. Smith	48,135
Buekle	C. B. Hatfield	48,236
Buekle	D. L. Smith	48,241
Buekle	T. G. Bailey	48,503
Buckle	B. S. Lawson	48,569
Buckle	P. White	48,610
Buekle	W. L. Hall	49,261
Buekle	C. W. Saladee	49,309
Buckle	A. H. Cole	50,337
Buckle	N. Post	50,386
Buekle	H. Aschenbach	50,673
Buekle	C. B. Hatfield	50,706
Buekle	J. Stanbrough	50,852
Buekle	C. S. Stearns and T. Corey	50,992
Buekle	J. Peabody	51,210
Buekle	S. P. Mitchell	51,606
Buekle	G. O. Monroe	51,740
Buekle, Belt	F. and C. Lemme	47,556
Buckle, Harness	C. W. Saladee	47,574
Buckle, Harness	S. E. Taylor and R. Tattershall	51,367
Buekle, Lever	L. A. Sprague	46,719
Buekle, Lever	H. W. Warner	48,121
Buekle, Loops to, Attaehing	L. C. Chase	48,153
Buekles, Shoe	J. Ellerman	50,345
Buckles, Traee	W. Wykoff	49,580
Buekles, Traee	D. F. Maine	50,017
Buekles, Traee	H. S. Woodruff	50,979
Buckles, Tug	C. D. W. Riee	47,570
Buckle attaehment	W. E. Barton	48,039
Buekle fastening	W. Wiley, jr.	50,195
Buffer and eoupling, Car	E. Miller	46,126
Buildings, Heating	H. Riehardson	47,569
Buildings, Moving	J. S. MeIntire	50,375
Buildings, Removing	J. S. MeIntire	49,427
Buildings, Siding and covering with wood	H. B. Adams	50,784
Buildings, Staging for	W. Arronquier	47,179
Building bloek, Artificial	G. E. Van Derburgh	48,744
Building block, Silieated	G. E. Van Derburgh	48,745
Buildings of every deseription, Cooling and ventilating	D. E. Somes	46,596
Buildings or rooms for the preservation of food and for other purposes.	D. E. Somes	46,276
Buildings and granaries, Cooling, drying, and ventilating	D. E. Somes	46,950
Buildings for preserving milk, fruit, &c	N. W. Clark	49,604
Bulkheads, Piers and	S. J. Seeley	46,144
Bullets, Lubricating	A. Ball	47,784
Bullets for rifled fire-arms	W. Rossee	47,792
Bumper, Car, Attachment for	J. P. Laird	46,248
Bungs	O. R. Burnham	51,422
Bungs for barrels	C. A. Neuhaus	48,427
Bungs for barrels and other vessels	A. G. Day	48,377

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Bungs to barrels, Securing bushes for	T. Summerfield	47,817
Bungs for casks	M. Hickey	49,473
Burners, Aero-vapor	W. Bryant	51,011
Burners, Argand, Manufacture of	E. S. Archer	46,063
Burners, Gas	J. A. Bassett	47,786
Burners, Gas	H. Berg	47,787
Burners, Gas	H. L. McAvoy	50,075
Burners, Gas	V. Dubourg	50,429
Burners, Gas	F. Küp	50,431
Burners, Gas	C. Ritter	50,628
Burners, Gas	J. Stratton	51,121
Burners, Gas, Argand	C. H. Johnson	48,340
Burners, Gas, for cooking purposes	A. Geiss	51,170
Burners, Gas, Regulators for	W. Mallard	47,362
Burners, Gas, Vapor	J. J. Riddle	50,845
Burners for gas stoves	T. J. Kelly	50,938
Burners, Gas, and stopcock	E. Jones	50,302
Burners, Hydrocarbon, for cooking and heating	H. W. Dopp	48,379
Burners, Kerosene	H. and J. Sangster	48,450
Burners, Kerosene	S. R. Wilmot	48,860
Burners, Lamp	A. H. Platt	46,138
Burners, Lamp	J. O. Harris	46,901
Burners, Lamp	J. P. Egan	47,625
Burners, Lamp	J. Wood	48,142
Burners, Lamp	R. S. Merrill	48,824
Burners, Lamp, Kerosene	A. B. Hendryx	49,680
Burners, Oil, Coal	W. W. Batchelder	47,381
Burners, Petroleum, for cooking, &c	J. P. Hayes	50,121
Burners, Vapor	J. Stratton	49,955
Burners of carburetted air	J. A. Bassett	46,770
Burners for gas stoves	E. Osmond	46,861
Burners for gas stoves	W. A. Thompson	50,515
Burners for lamps, Suspending	A. Moore and J. A. Cole	46,691
Burners for lamps and lanterns	J. H. Irwin	46,363
Burnisher, Shoemakers'	R. Egan	51,439
Burnisher and eraser	A. G. Shaver	49,558
Burnisher and eraser, Combined	A. G. Shaver	49,559
Burnishing machine	C. H. Helms	51,180
Burnishing machine, Shoe-edge	N. S. Thompson	50,856
Burns and scalds, Curing	L. Maxwell	46,570
Butter moulding machine	A. Nudd	48,088
Butter worker	L. Roy S. Starrett	46,953
Butter worker	J. P. Adams	51,408
Butter worker and churn, Combined	J. Randall	49,550
Butter and other substances, Preserving, Vessels for	J. G. Staunton	45,763
Buttons	E. S. Wheeler	45,781
Buttons	H. Bock	46,330
Buttons	P. H. Benedict	46,772
Buttons	J. F. Wild	46,840
Buttons	E. Maynard	47,843
Buttons	C. M. Loomis	48,079
Buttons	W. H. Reid	48,095
Buttons	W. B. White	49,595
Buttons	E. T. Barnum	49,846
Buttons	H. Gerner	50,927
Buttons, Composition for	E. S. Wheeler	50,974
Buttons, Glass, Holding shank of mould for	G. Matthewman	50,374
Buttons, handles for knives, and other purposes, Material for manufacturing.	L. E. Chittenden	55,977
Buttons, Planing	J. G. Valentine	46,763
Buttons, Riveting to cloth	W. J. Gordon and E. D. Gilbert	46,660
Buttons, Sewing to cards	E. S. Boynton	49,674
Button fastening	F. Dahis	50,988
Button-holes	H. B. Fairman	48,484
Button-hole cutters	F. C. Leypoldt	48,962
Button-holes in fabrics, Weaving	L. J. Knowles	46,679
Buttons and studs	S. E. Ritter	47,661
C.		
Cables, Draught, Sliding, for railroads	A. E. Beach	49,697
Cables, Draught, for railroads	A. E. Beach	49,696
Cables, Telegraphic	W. P. Piggott	50,314
Cage, Bird	C. L. Osborn	46,579
Calendar, Perpetual	H. W. Holly	45,795
Calendar, pen-rack, and letter balance, Combined	H. N. Taft	45,770
Calico, Printing	J. Green	51,039
Calipers	F. O. Washburn	45,894
Calipers	C. E. Brown	48,257
Calipers	B. G. Martin	51,517
Calipers	S. Whalen	51,767
Calipers, gauges, and rules, Connecting	N. H. Bundy	49,337
Calks, heel	T. Symonds	51,241
Calks, Horseshoe	J. L. Pike	46,262

Invention or Discovery.	Name of Patentee.	No.
Calks, Horseshoe	C. H. Johnson	47,360
Calks and horseshoes	C. H. Johnson	47,495
Calks, Toe	T. Symonds	51,242
Camera, Photographic	J. Stock	49,315
Camera, &c., Photographic, Achromatic object, Glass for	H. Roettger	47,336
Camera, Solar	H. Roettger	47,862
Camera stand	J. M. Harper	51,311
Camera stand, Photographic	J. Scouler	46,396
Cans	H. W. Miller	50,022
Cans, Fruit	J. Neuberger and P. J. Illig	47,216
Cans, Metal, Sheet	J. C. Eiben	50,344
Cans, Milk, Bottom for	A. Burnham	49,711
Cans, Oil	J. Broughton	46,635
Cans, Oil	J. M. Perkins and M. W. House	48,585
Cans, Oil	J. Mayhew	49,776
Cans, Oil	B. Clark	49,979
Cans, Oil	S. Short and E. S. Scripture	50,742
Cans, Oil, Caps of, Protecting	E. A. Moore	48,972
Cans, Paint, Ears for	C. F. Brand	46,176
Cans, Preserve	P. H. Niles	51,264
Cans, Sealed, and other, Opening	S. D. Lecompte	50,011
Cans, Tin, Soldering	R. J. Hollingsworth	49,880
Cans for tea, sugar, &c	D. H. Meloy	51,605
Cans for preserving butter	W. C. Rentgen	51,352
Cans for preserving and transporting milk	M. M. Clark	46,640
Cans and boxes, Metal	H. Everett	47,939
Cans and jars, Lifting	J. E. Higby	50,476
Canceller and hand stamp	J. B. Secor	50,501
Candles, Moulded	J. L. Field	46,197
Candles from paraffine, Manufacture of	C. Harvard	50,000
Candlestick	W. H. H. Hinds	50,708
Candy, Medicated	L. Morgenthau	47,504
Candy, Medicated	B. H. Bener and M. H. Burgess	48,645
Candy cigar machine	H. Geilhausen	49,515
Cane stripper	G. E. Sellers	46,031
Cane stripper	J. A. Hall	49,260
Cane stripper	W. Gladden and R. F. Bishop	50,350
Cane stripper	H. Rockwell	51,482
Cane stripping	T. W. Pierce	49,785
Cannons, Forging	A. Hitchcock	49,266
Cannons, Repeating	T. Tufts	46,762
Cannons, Rim bases of, Turning	E. Kaylor	50,598
Canteen plates, cup, and funnel	C. O. Farciot	46,095
Capstan	W. D. Grimshaw	51,174
Capstan, Power	D. N. B. Coffin, jr.	51,107
Capstan and screw windlass	H. Heitman and J. Radican	47,104
Capstan for working beater hay press	P. K. Dederick	49,678
Capsules	D. Dick	49,242
Capsules for preventing the soiling of fire-arms	F. L. M. Dorvault	47,503
Car, Aerial	T. Just and A. Koellener	50,365
Cars, Coupling and uncoupling	S. H. Hamilton	49,754
Cars, Freight	L. Myers	48,830
Cars, Locomotive	H. F. Shaw	50,282
Cars, Platform, Stake-holder for	E. A. Eddy	48,799
Cars, Platform, Stake-holder for	E. A. Eddy	48,800
Cars, Railroad	R. T. M. Wells	45,778
Cars, Railroad	S. Skillman	45,871
Cars, Railroad	W. Partridge	49,648
Cars, Railroad	A. E. Beach	49,695
Cars, Railroad	G. W. Cook	51,698
Cars, Railroad, Attaching	J. Fortun	51,277
Cars, Railroad, Bending and punching the frames of draw-heads for.	P. L. Weimer	50,755
Cars, Railroad, Pedestals for	J. P. Wendell and S. Ustick	50,427
Cars, Railroad, Propelling	S. G. Randall	47,858
Cars, Railroad, Road for starting	T. R. Sinclaire	51,626
Cars, Railroad, Running gear of	S. B. Driggs	46,784
Cars, Railroad, Running gear of	J. Stephenson	49,904
Cars, Railroad, Running gear of	H. H. Trenor	50,518
Cars, Railroad, Stake-holder for	A. R. Burdick	45,891
Cars, Railroad, Ventilating	T. H. B. Sanders	50,960
Cars, Railroad, Ventilator for	A. P. Vining	50,522
Cars, Railway	D. H. Dotterer	46,341
Cars, Railway	S. Valls	47,156
Cars, Railway	W. S. Hall	48,553
Cars, Railway	E. H. Derby and T. West	49,508
Cars, Railway	S. C. Hawkins	50,472
Cars, Railway, Horse, Starting	W. Henderson and J. W. Fowle	47,722
Cars, Railway, Sliding doors of	A. G. Safford	49,308
Cars, Railway, Starting	W. Lawton	49,770
Cars, Railway, Steam	J. P. Woodbury	46,043
Cars, Railway, Steam, Street	J. P. Woodbury	48,008
Cars, Railway, Train and	S. R. Calthorp	49,227
Cars, Removing, from the track	D. R. Erdmann	49,737

Invention or Discovery.	Name of Patentee.	No.
Cars, Revolving	D. Lott	49,126
Cars, Sleeping	C. T. Harvey	48,393
Cars, Sleeping	B. Field and G. M. Pullman	49,992
Cars, Starting	A. F. French	49,195
Cars, Street, Propulsion of	C. M. Mann	48,081
Cars, Street, Switching	J. S. Reid	48,978
Car bumper attachment	J. P. Laird	46,248
Car platform stake-holder	C. A. Bryan	48,899
Car tracks, Railway	D. H. Dotterer	49,510
Car truck frames	D. B. Rogers	47,863
Car trusses, Railroad	J. F. Keeler	45,834
Carbine sockets	J. S. P. Taylor	48,462
Carbon batteries, Connection for	C. T. Chester	51,144
Carbonic acid gas, Generating	P. and F. Hinkel	47,205
Cards, Match	M. G. Crane	49,727
Cards, Match splint	B. Hotchkiss	48,176
Cards, Paper, Collars, &c., Removing from embossing press	T. Tebbetts	50,514
Card mount, Photographic	T. Mayhew	46,008
Card or curry-brush	J. Voak	46,510
Carding, picking, and other similar engines, Means for feeding wool and other fibrous material to.	S. R. Parkhurst	47,976
Carding cylinders, Closing	A. A. Hawley	49,679
Carding engine, Doffing apparatus for	R. Lord and L. Hutton	46,120
Carding engine, waste-saving attachment to	A. A. Bennett	47,274
Carding machines	D. Tainter	47,345
Carding machines	D. Tainter	47,668
Carding machines	P. S. Haines	48,059
Carding machines, Oiling wool in	G. S. Harwood	46,104
Carding machines, Oiling wool in	J. Eccles	47,767
Carding machines, Wool in, Oiling	J. W. Hussey	46,189
Carding machines, Wool in, Oiling	J. Shinn	46,194
Cargo of a sunken vessel, Discharging	P. E. Falcon	49,026
Carpenters' squares, Indicating	H. K. Jones	46,191
Carpets, Flooring or dust rack for	G. J. Colby	48,907
Carpet bags	N. Grod	50,815
Carpet fastener	J. O. Jones	48,410
Carpet fastener	W. B. Blaisdell and J. E. Atwood	49,850
Carpet fastening	G. W. Andrews and J. P. Burnham	49,600
Carpet stretcher	N. Hill	46,357
Carpet stretcher	G. G. Mudge	48,829
Carpet stretcher	F. J. Collier	48,882
Carpet stretcher	H. A. Mead	48,968
Carpet stretcher	J. Boyd	51,545
Carriages	L. W. Mason	47,211
Carriages	E. Robbins	48,310
Carriages, Children	O. Mather	48,821
Carriages, Double-tree for	J. Hoover	46,904
Carriages, Horse	R. Perrine and S. M. Stewart	47,330
Carriages, Journal boxes for	E. P. Palmer	50,948
Carriages, Railing	T. West	47,143
Carriages, Railway	L. H. West	49,942
Carriages, Thills to, Connecting	B. E. Sampson	48,313
Carriages, Thills to, Coupling	D. C. Breed	45,812
Carriages, Wagons, &c	E. Lane	51,196
Carriages or sleds	H. Smith	47,580
Carriage knobs	R. P. Cowles	48,373
Carriage tops	J. Enders	48,386
Carriage tops	K. T. Hurlburt	48,688
Carriage tops	L. Z. Dodds and R. Walsh	49,611
Cart, Ash	R. A. Smith	45,761
Cartridges	S. Jackson	45,830
Cartridges	T. P. Shaffner	51,672
Cartridges	T. P. Shaffner	51,673
Cartridges, Balls to, Attaching	D. Ellis and G. R. Stetson	48,056
Cartridges, Compressing around bullets	J. S. Adams	48,010
Cartridges, Metallic	H. C. Spalding	46,034
Cartridges, Metallic	E. Allen	47,688
Cartridges, Metallic	T. J. Powers	50,536
Cartridges, Metallic, Coupling	T. J. Powers	47,246
Cartridges, Metallic, Priming	E. Martin	48,820
Cartridges, Metallic, Priming	S. Crispin	49,237
Cartridges, Metallic, Priming	C. Jackson and J. G. Pusey	50,592
Cartridges, Metallic, Priming	T. T. S. Laidley	51,324
Cartridges, Tobacco	A. C. Breckenridge	51,255
Cartridge box	M. V. B. White	46,411
Cartridge box	W. Rossiter	49,304
Cartridge box	A. D. Laidley	49,420
Cartridge box	J. Pease	50,730
Cartridge box, Revolving	C. Howlett	49,523
Cartridge cases, Metallic	W. C. Dodge	48,536
Cartridge cases, Nicking	B. Payne	50,489
Cartridge retractor for breech-loading fire-arms	F. Beals	46,207
Cartridge retractor for breech-loading fire-arms	E. Allen	46,617
Cartridge retractor for breech-loading fire-arms	H. H. Walcott	48,227

Invention or Discovery.	Name of Patentee.	No.
Cartridge retractor for breech-loading fire-arms	J. Gray	48,337
Cartridge retractor for breech-loading fire-arms	E. Maynard	48,966
Cartridge retractor for breech-loading fire-firms	G. P. and G. Foster	49,994
Cartridge retractor for breech-loading fire-arms	E. S. Piper	51,391
Cartridge retractor for breech-loading fire-arms	T. L. Sturtevant	50,854
Cartridge retractor for many chambered fire-aams	W. C. Dodge	45,912
Cartridge for breech-loading and rifled fire-arms	H. Berdan	46,292
Cartridges for small arms	D. M. Mefford	47,317
Carts, Hay, Self-loading	E. Holt	45,715
Cases, boxes, &c., Air-tight	J. G. Staunton	45,766
Cases for jewels	G. F. Kolbe	47,430
Cases for preserving animal and vegetable substances during transportation.	J. G. Staunton	45,764
Casks, Gauging and ullaging	W. W. Cooper	50,689
Casks, Heads of	E. P. Spaulding	47,717
Casks, Rendering oil-proof	S. Gardner	50,238
Cask for preserving beer, &c	J. Haege	45,994
Cast from the face of living persons, Taking	C. Mills	47,121
Caster bottle-holder	A. E. Young	49,840
Caster bottle-holder	A. E. Young	49,841
Caster for furniture	A. Walker	45,773
Caster for furniture	R. J. Beardsley	46,334
Caster for furniture	F. G. Ford	47,007
Caster for furniture	N. T. Mersereau	47,117
Caster for furniture	M. L. Babb	48,146
Caster for furniture	P. B. Holmes	50,249
Castings, Chilled	G. W. Bollman and W. Neemes	50,680
Castings, Composition for	G. Nimmo	48,973
Castings, Cores for, Making and ventilating	J. Harrison, jr	49,264
Casting stereotyped plates	W. F. Draper	51,437
Casting tackle blocks	J. W. Norcross	47,656
Catamenial sacks	E. L. Perry	49,915
Cattle stanchions	H. Maycock	45,728
Cattle tie	J. Ives	49,630
Cement	J. Stansfield	50,184
Cement, Asphaltic	I. G. Reinhold	46,975
Cement pipes	J. E. Earle	49,827
Cement pipes	W. Goodwin	49,828
Cement for steam joints	J. G. Kilgour	51,060
Centre, Dead, Lifts for	J. J. Gorman	46,102
Centre board	G. M. Fay	49,514
Centre of circles. Finding, Instrument for	E. P. Rogers	50,275
Chains, Horse	H. W. Knowlton	48,957
Chain holder	S. Gladding	48,675
Chain links, Bending	P. L. Weimer	50,758
Chain links, Swaging	V. Draper	50,200
Chain links, Trimming	T. Van Patten	51,102
Chains for water elevators	P. Anderson	47,595
Chairs	J. A. and H. A. House	48,177
Chairs	J. Habermehl	48,272
Chairs, Adjustable	T. Weaver	45,887
Chairs, Dental	W. M. Butler	51,553
Chairs, Dental, Operating	J. O. Whitcomb	50,291
Chairs, Invalid	T. J. Blackburn and E. P. Terrell	49,849
Chairs, Nursery	S. Rainey	50,215
Chairs, Railroad	J. H. Jones	46,803
Chairs, Railroad	H. W. Warner	50,309
Chairs, Railroad	J. A. Roebling and J. McMurtry	50,776
Chairs, Railroad, Bolt screw for fastening	R. J. Dewhurst	48,531
Chairs, Railroad, Wrought Iron	J. H. Mabbett	46,370
Chairs, Railway	J. E. Williams	47,484
Chairs, Railway	W. H. Peckham	47,747
Chairs, Railway	B. T. Milburn	48,873
Chairs, Railway	J. L. Hills	49,107
Chairs, Railway	J. Cochrane	49,722
Chairs, Reclining	H. Thompson	47,469
Chairs, Sheep	O. Barker and G. E. Blakelee	49,067
Chairs, Sick	C. H. Bayley	47,509
Chair bottom	C. Russell	50,166
Chair bottom or back	W. Bramhill	51,132
Chair seat	E. Ransom	50,955
Chair splints, Cutting	T. N. Davey	45,790
Chair and coupling, Railroad	W. Hendershott	47,820
Chair and cradle	G. W. Hawk	47,542
Chair and scale, Child's exercising	T. Shedd and F. Glockner	51,091
Chair and stool, Barber's	H. Remick	50,032
Chair or table, Folding	F. Ludke	46,121
Chalk holder for billiard tables	H. M. Wall	51,499
Chandelier	P. Loth	47,312
Charcoal, Cleansing and revivifying	G. A. Gasper	47,308
Checks, Baggage	J. Murdock, jr., and W. W. Spencer	49,543
Check boxes, Conductors'	T. W. Knox	47,646
Cheese, Curd of, Cutting the	S. Thomson	46,735
Cherry-stoner and pea-sheller	G. Sanford	50,278

Invention or Discovery.	Name of Patentee.	No.
Cherry-stoning machine	T. Van Kannel	48,137
Chest, Flour	M. W. Hill	49,404
Chest and table	G. W. Zeigler	49,821
Chimney	C. C. Phelps	47,448
Chimney, Gas-burner	J. Stratton	49,010
Chimney, Lamp	W. H. Culp	49,089
Chimney, Lamp	J. G. Floyd	49,993
Chimney, Lamp, Handles for	M. W. Brown	46,212
Chimney, Lamp, Moulding	E. Ettinge	50,105
Chimney, Lamp, Removing	G. Asmus	48,354
Chimney, Lamp, and bottles, Cleansing	J. T. Walker	49,458
Chimney cap	G. W. Demond	47,525
Chimney caps	J. H. Kirkwood	49,890
Chimney cap	W. H. Horton	50,002
Chimney cap	E. Hinkley and G. W. Crowell	50,086
Chimney top	B. A. Hendrikson	50,356
Chlorine, bleaching powder, carbonate of soda, and other products, Preparing.	F. McFarlan	49,591
Chromium, Salts of	B. Margulies	49,682
Chronometer escapement	C. Fasoldt	46,652
Chronometer escapements	H. Rothfelder	48,726
Chronometer escapements	J. Karr	51,191
Chucks	M. Straub	50,747
Chucks, Universal	W. H. King	47,428
Chucks, Self-entering	T. H. Worral	46,747
Chucks, Self-entering	T. Brooks	50,329
Chucks, Self-entering	S. T. Jackson	50,593
Chucks, Self-entering	T. H. Worral	48,612
Chucks, Scroll	A. F. Cushman	50,691
Chucks, Scroll	A. F. Cushman	51,384
Chucks for lathe	S. J. Cone	48,521
Churns	A. W. Hall	46,185
Churns	D. C. Aldrich	46,202
Churns	E. L. Bergstretter	46,440
Churns	J. N. Pease	46,695
Churns	A. Westcott	46,739
Churns	J. Aiken	46,749
Churns	H. Allen, jr	46,766
Churns	E. Chipman	46,880
Churns	J. Rankin	47,129
Churns	S. E. Saul	47,134
Churns	H. P. Westcott	47,145
Churns	E J. Phillips	47,219
Churns	A. O. Gallup and E. A. Hewett	47,292
Churns	C. F. Baylor	47,383
Churns	C. T. Anderson	47,507
Churns	W. Hozier	47,952
Churns	A. Rhoades	48,096
Churns	R. Reese	48,182
Churns	G. Hart	48,277
Churns	E. F. Holloway	48,278
Churns	J. F. Sanborn	48,449
Churns	I. M. West	48,469
Churns	W. Edmister and S. Johnson	48,666
Churns	C. G. Bishop	48,786
Churns	H. Hutchinson	48,815
Churns	H. Soggs	48,987
Churns	A. Newbrough	49,138
Churns	H. L. Hervey	49,345
Churns	W. H. Slonaker	49,450
Churns	B. L. Winner	49,464
Churns	A. A. Newman	49,646
Churns	E. Kenney	50,009
Churns	W. L. Imlay	50,129
Churns	J. B. Ghormley	50,349
Churns	W. Robinson	50,631
Churns	J. Thompson	50,645
Churns	T. J. Burke and S. B. Gassette	50,684
Churns	R. L. Shute	50,963
Churns	A. R. Morehouse	51,073
Churns	D. F. Ward	51,246
Churns	T. M. Hill	51,320
Churns	J. J. Robinson	51,354
Churns, Operating	J. Redding	48,094
Churns, Pneumatic	A. J. Smith	47,607
Churn dasher	D. McCurdy	46,810
Churn dasher	N. Starbuck	46,952
Churn dashers	D. Johnson	47,259
Churn dasher	E. M. Wright	47,763
Churn dasher	J. Hobbs	50,122
Churn dasher	M. J. Smith	50,851
Churn dashers, Moving	A. W. Hall	46,970
Churn and butter-worker, Combined	J. Randall	49,550

Invention or Discovery.	Name of Patentee.	No.
Cigars	C. Walton	48,119
Cigars	D. Davidson	48,527
Cigars, cigarettes, &c., Manufacture of	L. Morgenthau	46,855
Cigars, Cutting off	C. and F. W. Hoffman	48,174
Cigars, Manufacture of	J. Ball	45,808
Cigars, Mouthpiece of	J. Ball	46,986
Cigar case	C. A. Perry	51,080
Cigar machine	J. Thompson	46,404
Cigar machine	G. Buckle	49,700
Cigar machine	E. J. Fisk	51,578
Cigar wrapper	C. E. Roffe	50,038
Cigarettes	M. J. Danziger	46,885
Cigarettes	L. L. Arnold	47,079
Cigarettes	T. C. Richards	47,660
Cigarettes	M. J. L. Manoz	48,148
Cigarettes and cigars, Manufacture of	L. Morgenthau	46,855
Circles, Centre of, Finding, Instruments for	E. P. Rogers	50,275
Clamp, Book	J. W. Jones	50,597
Clamp, Boot and harness	A. J. Curtis	50,766
Clamp, Gasfitters'	J. Peace	48,431
Clamp, Planking	J. Macotter	50,941
Clamp or strap ring	J. Cogan	50,688
Clamp for covering rollers with cloth or canvas	H. W. Holly	51,182
Clamp for straps	J. F. G. Fisher	49,252
Clamp for stretching card clothing upon carding cylinders	J. O. Lewis	47,210
Clamps and bench hooks	E. P. Wood and A. E. Blood	48,498
Clamping devices	E. Simmons	50,175
Clapboards	H. Osgood	50,839
Clasp, Clinching, on hoop-skirts	G. F. Wright	49,957
Clasp for clothing	C. Seaver, jr	47,135
Clasp for holding neck-ties and shirt-collars together	W. S. Barnes	48,356
Clasps for hoop-skirts	J. H. Doolittle	50,102
Clasp from sheet metal	J. H. Doolittle	47,704
Clasp for wearing apparel	F. Wood	46,288
Claw bar	H. Jeffrey	50,361
Claw bar	G. Brownell	50,899
Clay, Damp, Pressing	J. Steele	47,684
Clay, Slops of, or pap for potters' use	J. Muir	45,736
Clay for potters' use, Preparing	J. Muir	45,737
Clay retorts, Decarbonizing	G. W. Edge	49,989
Clocks, Calendar	D. J. Mozart	46,577
Clocks, Calendar	H. B. Horton	47,306
Clocks, Calendar	T. T. Strode	49,169
Clocks, Calendar	W. K. Chase	51,556
Clocks, Globe	T. R. Timby	47,585
Clocks, Marine	L. Hunt	51,184
Clocks, Public, Illuminating	T. I. Bailey	51,411
Clock escapement	M. J. Weaver and J. M. Sandifer	49,323
Clock escapement	H. T. Hewett	51,044
Clod crushers	W. Fenstermacher	45,705
Cloth, Felted	C. T. Young	48,757
Cloth, Flocked, Dyed or printed	T. Croply	46,199
Cloth, Flocked, Water-proof	T. Crossley	46,200
Cloth, Hair and grass, Preparing woof for the manufacture of	J. Downie	48,796
Cloth, Military insignia woven in	A. M. Dorman	49,339
Cloth, Ripping sutures in	T. B. Converse	48,662
Cloth-drying machine	E. F. Bennett	49,947
Cloth, the weft of which is made of hair, grass, &c., Improvement in.	J. Downie	51,436
Cloth and vegetable fibre for bleaching, Preparation of	G. W. Billings	46,774
Clothes, Washing and cleansing	W. Price	46,701
Clothes-boiler drainer	T. Browning	51,670
Clothes bracket	J. Stimpson	49,007
Clothes dotter	S. S. Gould	47,944
Clothes drier	E. Sims	46,151
Clothes drier	E. Culver	46,452
Clothes drier	E. B. Taylor	46,731
Clothes drier	J. H. Doughty	46,999
Clothes drier	E. Bucklin, jr	47,698
Clothes drier	D. I. Kellogg	48,183
Clothes drier	J. P. Dorman	48,537
Clothes drier	S. Cole	48,910
Clothes drier	J. M. Butters	49,498
Clothes drier	G. F. Tilton	50,968
Clothes drier	G. H. Jackson	51,057
Clothes drier and lamp stand, Combined	J. Donaldson	49,244
Clothes mangle	J. B. Greenhut	51,452
Clothes pin	H. W. Sargent, jr	47,223
Clothes retainer, Bed, Children's	M. L. Thompson	51,270
Clothes sprinkler	E. Schnurr	49,794
Clothes sprinkler	E. T. Colburn	51,509
Clothes wringer	J. H. Pease	47,774
Clothes wringer	S. S. Hemenway	47,951
Clothes wringer	H. G. Folger	48,545

Invention or Discovery.	Name of Patentee.	No.
Clothes wringer	J. F. Holt	49,030
Clothes wringer	J. O'Donald	51,743
Clinching and nipping tool	D. A. Wilson	50,539
Clutch, Friction	W. H. Brown	51,134
Clutch, Friction	H. K. Smith	51,360
Clutch, Machinery	T. F. Hammer	48,769
Clutch for connecting and disconnecting machinery	D. M. Smyth	51,665
Clutch or rope holder	C. A. Emery	49,990
Coal, Artificial, Soft	R. Covert	48,372
Coal, Boring and excavating	A. Buchanan	48,258
Coal breaker	J. Fox	47,409
Coal breaker	P. Umholtz	48,224
Coal breaker	J. A. Dickson	48,532
Coal dust, peat, &c., Consolidating	W. J. Cheyney and E. T. Dieterichs	46,777
Coal-hod and slop-pail, Combined	C. Jones	48,020
Coal mining machine	J. S. Fisk and J. Westerman	45,917
Coal mining machine	E. K. and J. M. Bruce	49,972
Coal mining machine	J. W. Grier and R. H. Boyd	50,577
Coal mining machinery	J. G. Jones	51,405
Coal-scuttle and ash-screen, Combined	A. F. Carlin and L. Rockwell	50,685
Coating for oil vessels	S. Gwynn	48,552
Coats with inner sleeves	J. W. Moyer	46,016
Cocks	N. Jenkins	47,309
Cocks	J. P. Gallagher	48,673
Cocks	J. Regester	48,721
Cocks	J. Powell	51,349
Cocks, Draught, for soda-water apparatus	L. D. Hoyt and R. Murray	48,489
Cocks, Gauge	C. T. Woodman	51,274
Cocks, Gauge	J. Broughton	51,418
Cocks, Gauge	V. Girond	49,623
Cocks, Globe	J. Powell	47,565
Cocks, Self-closing	N. Jenkins	48,407
Cocks, Steam	J. B. Sargent and F. W. Towne	48,452
Cocks, Steam	A. Tyler and G. F. Kendall	49,666
Cocks, Steam	A. Hollowell and H. R. Barker	51,177
Cocks, Stop, Rotating	D. Hurd	47,546
Cocks, Stop, and gas-burner	E. Jones	50,302
Cocks, Three-way	F. S. Pease	48,430
Cocks, Valve	N. Jenkins	49,116
Cocks, Valve, Globe	F. Lunkenheimer	46,685
Cocks, Valve, Steam, Screw	S. D. Fales	47,097
Coffee, Making	H. A. Zopff	50,412
Coffee, Preparing	L. D. Gale	48,268
Coffee-boiler alarm	E. K. Sargeant	50,169
Coffee percolator	J. H. Nason	51,741
Coffee pot	H. Young	45,787
Coffee pot	L. H. Little	46,917
Coffee pot	J. H. Swing	47,466
Coffee pot	E. Pineus and D. B. Emerick	51,083
Coffee pot	J. H. Lee	51,198
Coffee roaster	C. A. Mills	50,878
Coffee roaster and grain drier	G. D. Jones	46,301
Coffee settler	W. F. Rossman	47,460
Coffee and tea drawer	J. C. Shriner	49,929
Coffer-dam	A. Folsom	46,098
Coffin	T. Graham	47,414
Coffins, Deodorizing	A. E. Lyman	47,313
Coffin, Wooden	M. R. Margerum	50,144
Coffin handles	I. Almy	47,375
Coffin handles	A. Clark	51,693
Coffin handles	D. W. Sexton	48,215
Coffin lids	J. C. Seely	48,842
Coils for steam-heating apparatus	J. Trageser	49,509
Collar, Horse	S. B. Edson	47,000
Collars, Horse	C. J. Fisher	49,743
Collars, Horse	A. M. Stannard	50,505
Collars, Horse	T. W. Murphy	51,341
Collars, Horse, Fastening for	H. H. Fleming	51,033
Collars, Horse, and Hames	M. Killacky	46,606
Collars, Metallic	L. Billon	49,702
Collars, Paper	W. S. Bell, jr	46,332
Collars, Paper	W. L. Duff	48,016
Collars, Paper	W. S. Bell, jr	48,148
Collars, Paper	G. F. Bigelow	48,359
Collars, Paper	S. B. Hutchinson	49,347
Collars, Paper	S. C. Shaw	50,663
Collars, Paper	D. M. Smith	51,361
Collars, Paper, cards, &c., Removing from embossing press	T. Tebbetts	50,514
Collars, Paper, Enamelled	J. H. Hoffman	45,998
Collars, Paper, Forming	H. S. Bell	46,291
Collars, Paper, Folding	A. H. Cook	46,669
Collars, Paper, Folding	E. Vossnack	50,426
Collars, Paper, Ladies'	S. S. Gray	46,232
Collars, Paper, Machines for making	S. Shepherd and A. M. George	49,927

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Collar, Paper, Machines for making	G. K. Snow	51,233
Collars, Paper, Machines for making	G. K. Snow	51,234
Collars, Paper, Shaping	W. E. Lockwood and H. Howson	49,952
Collars, Paper, Shirt	G. K. Snow	46,310
Collars, Paper, Stretching	C. Spofford and W. S. Bell	46,400
Collars, Paper, Sweat-proof	J. H. Hoffman	47,107
Collars, Shirt	A. A. Evans	48,802
Collars and bosoms	C. E. Richards	49,039
Collars and cuffs	G. W. Ray	48,239
Collars and cuffs, Manufacture of	A. Taylor	50,513
Collars and cuffs, Water-proof	G. W. Ray	48,239
Colors from aniline, Preparing	H. Karcheskie	46,804
Colors and dyes, Preparation and manufacture of	G. H. Reed	50,495
Coloring matter	J. Holliday	51,404
Coloring matter for dyers, Preparing	J. Eberhardt	46,888
Combs	G. F. J. Colburn	45,909
Combs	G. F. J. Colburn	46,082
Combs	I. H. Southworth	50,400
Combs, Curry	C. W. Saladee	46,710
Combs for combing wool, flax, cotton, &c	J. B. Siccardi and J. Hyde	46,397
Combustion, Supporting	J. A. Bassett and E. L. Norfolk	46,624
Commode and bureau	G. W. Kock	49,766
Compass	P. Roessler	50,037
Compass, Azimuth	E. S. Ritchie	49,157
Compass; Determining the variation of the	E. S. Ritchie	45,753
Compass, level, square, and plumb-staff, Combined	J. R. Abbott	51,675
Compass, Liquid	E. Blunt	51,290
Composition, Deodorizing	A. Rankin	51,216
Composition, Fire-proof	N. E. Blake	47,275
Composition for coating oil barrels, and for other purposes	J. G. Thompson	46,734
Composition for lining oil barrels	H. Loewenberg	47,496
Composition for lining barrels, &c., for containing petroleum	H. Preuss	45,857
Composition for lining barrels for petroleum	L. Francis	46,554
Composition for rendering barrels impervious to oil, &c	G. R. Percy	46,021
Compound, Fulminating	H. B. Stockwell	48,460
Compound, Incendiary	H. W. Libbey	48,187
Compound, Medical	A. P. Coryell	46,449
Compound, Medical	J. Thurmon	47,140
Compound, Medical	L. Shults	47,750
Condensers	J. M. Spiegel	45,941
Condensers	W. A. Lighthall	46,254
Condensers	A. C. Fletcher	48,710
Condensers	T. Collans	49,855
Condensers, Tubular	W. A. Lighthall	46,117
Condensers, Tubular	N. W. Wheeler	47,480
Condenser cases	W. A. Lighthall	46,253
Condensers and refrigerators	W. A. Lighthall	46,368
Condensing and cooling apparatus used in brewing and distilling.	D. E. Somes	46,594
Conductors, Water, Cut-off for	J. Ash	49,960
Cooking, washing, &c., apparatus	S. S. Fitch	51,164
Cooking apparatus	J. Zimmerman	47,675
Cooking apparatus, Steam	A. F. W. Neynaber	51,208
Cooler, Beer	F. Uhrland	50,055
Cooler, Beer	G. Waters	50,056
Cooler, Fire	H. Bloedel	51,685
Cooler, Liquid	C. P. Zimmerman	51,275
Cooler, Soda-water, and draught pedestal	G. T. Palmer	46,581
Cooler for breweries	A. Hammer	47,298
Cooler, Beer, and other liquids	J. Chollar and C. W. Cunningham	48,791
Cooler for brewers	C. R. M. Wall	49,573
Cooler and filter	W. P. Dickinson	51,703
Cooler and filter combined	L. Scharff	51,485
Cooling, heating and ventilating	D. E. Somes	51,236
Cooling, preserving and packing houses, refrigerators and other similar structures.	D. E. Somes	46,595
Cooling soda-water, &c	E. Bigelow	51,130
Cooling water in wells	D. E. Somes	50,399
Cooling and condensing apparatus used in brewing and distilling.	D. E. Somes	46,594
Cooling and ventilating dwellings, chambers, hospitals, theatres, and other buildings.	D. E. Somes	46,596
Cooling and ventilating ships and other vessels	D. E. Somes	46,593
Cooling and stirring, Apparatus for	A. G. Knapps	46,476
Cords, braids, &c., Starching and glazing	D. McInroy	51,471
Cords, Covering	J. Buser	49,825
Cords, ropes, &c., Making	J. O. Mathieu	46,057
Cords for window sash	S. Wales	50,405
Cord-tightener for window curtains	M. Hey	51,045
Cores, Moulding	J. P. Davis	47,937
Cover for casting, Making and ventilating	J. Harrison, jr	49,064
Cork, Article of	E. L. Perry and E. D. Lazell	49,916
Cork, Artificial	L. Bock and A. T. Wheeler	49,220
Corks, Cutting	P. Hayden	51,587

Invention or Discovery.	Name of Patentee.	No.
Corks, Slicing	J. Power	49,299
Cork machines	H. Boardman	49,971
Cork pull	F. G. Biefield and C. E. E. Schwartz	47,161
Corn-horse for stacking corn	L. S. Barker	51,540
Corn huskers	E. F. French	47,710
Corn husker, sheller, and cleaner	C. J. Legg	48,077
Corn husking	J. M. Hubbard	57,598
Corn sheller	D. Hutchinson	45,924
Corn sheller	P. Sweeny	46,155
Corn sheller	G. Ketchum	46,245
Corn sheller	J. Brinkerhoff	46,540
Corn sheller	J. H. Schroeder	47,988
Corn sheller	G. W. Fitts	48,670
Corn sheller	J. W. Ricker and T. S. Lewis	49,303
Corn sheller	H. F. and G. F. Shaw	50,740
Corn sheller, Feeding corn to	H. C. Robinson	45,862
Corn-stalks in the ground, Cutting	T. W. McDill	48,704
Cornets	L. Schreiber	49,925
Corsets	C. Preston	47,856
Corsets	J. Bowers	48,045
Corset clasp	R. W., D. G., and H. E. Fowler	50,524
Cotton, &c., Combing	I. Dimock	49,865
Cotton, Gun	J. J. Revy	50,082
Cotton, Gun	J. J. Revy	50,083
Cotton, Gun, and lint	J. P. McLane	47,316
Cotton, linen, &c., Dyeing and printing	A. Parof	50,885
Cotton-bale raft	T. Bryne	51,140
Cotton chopper, cultivator, and drill	J. A. Hall	49,104
Cotton gins	W. B. Emory	47,626
Cotton gins	F. Durand	50,080
Cotton gins	C. Brakell	51,402
Cotton gins, Roller for	I. F. Brown	45,695
Cotton-seed planter	I. Myers and M. D. Wellman	46,132
Couplings	W. N. Abbott	46,603
Coupling	G. E. Clark	51,695
Coupling, Car	L. Moody	45,733
Coupling, Car	M. Rinehart	45,939
Coupling, Car	C. Clinton	46,336
Coupling, Car	P. J. Gross	46,465
Coupling, Car	F. M. Gifford	46,656
Coupling, Car	T. Tripp	46,958
Coupling, Car	E. P. Howland	47,108
Coupling, Car	J. H. Reed	47,455
Coupling, Car	H. M. Rulon	47,985
Coupling, Car	G. C. Lawton	48,076
Coupling, Car	W. C. Clark	48,617
Coupling, Car	S. S. Chaney	48,656
Coupling, Car	J. W. Boughton	48,787
Coupling, Car	W. C. Morse	49,292
Coupling, Car	S. D. Locke	49,348
Coupling, Car	J. Couch	49,385
Coupling, Car	J. G. W. Coolidge	49,676
Coupling, Car	A. J. Hobbs	49,879
Coupling, Car	J. Lacey and G. Watkins	50,010
Coupling, Car	A. Melet and J. T. Fry	50,148
Coupling, Car	L. Moody	50,152
Coupling, Car	G. G. Campbell	50,559
Coupling, Car	S. A. Corser	50,797
Coupling, Car	H. H. Flemming	50,811
Coupling, Car	H. S. Shepardson	50,882
Coupling, Car	E. W. Wilson and J. E. Erwin	50,994
Coupling, Car	A. G. Page	51,209
Coupling, Car	A. S. Markham	51,330
Coupling, Car	G. L. Kitson	51,461
Coupling, Car	T. Arndt	51,535
Coupling, Car	L. Moody	51,608
Coupling, Car, Railroad	H. J. Gilman	48,926
Coupling, Car, Railway	A. Roll	51,223
Coupling, Gas-pipe	D. L. Freeborn	50,111
Coupling, Pipe	A. E. Barnard	48,038
Coupling, Pipe	J. Chamber	48,517
Coupling, Pipe	A. M. George	48,674
Coupling, Pipe	C. W. Emery	48,709
Coupling, Pipe	W. Dutemple	48,797
Coupling, Pipe	J. Old	49,142
Coupling, Pipe	J. Old	50,619
Couplings, Railway	D. H. Hise	45,713
Coupling, Rod, Connecting	H. S. Dodge	51,512
Coupling, Thill	H. K. Waterhouse	50,189
Coupling, Thill	J. W. Innis	51,457
Coupling for carriages	J. Bundy	48,653
Coupling conducting wire	G. W. Beardslee	47,918
Coupling for drill or pump rods	J. R. Cross	49,386

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Coupling for railroad cars	J. R. Hill	50,824
Coupling shaft	G. H. Fox	50,700
Coupling shaft for carriages	F. B. Morse	47,154
Coupling shaft, Jack for	A. J. Settle	48,984
Coupling shaft for boring tools	J. N. Bolles	47,613
Coupling shaft of boring tools	J. Esler	48,667
Coupling shaft for boring tools	R. H. Lecky	47,535
Coupling shaft of boring tools	J. Watson	50,190
Coupling shaft of boring tools	E. Kayler	50,138
Coupling shaft of boring tools	A. A. Wilson	47,907
Coupling shaft of boring tools	D. G. Coppin	48,793
Coupling shaft of boring tools	R. H. Lecky	47,554
Coupling shaft of boring tools	J. B. Stockton	50,287
Coupling shaft for clutch pulleys	E. O. Potter	51,619
Coupling for shafting, &c	R. Briggs	47,388
Coupling spring, Gum elastic	S. M. Hoover	47,305
Coupling for thills	E. D. Clapp	47,520
Coupling tools for drilling	J. and R. Moore	47,031
Coupling and buffer, Car	E. Miller	46,126
Coupling and chair, Railroad	W. Hendershott	47,820
Cradle, Self-rocking	H. G. Williams	46,744
Cradle and chair	G. W. Hawk	47,542
Cradle and crib	H. H. Eastman	46,091
Cranberry gatherer	G. Shove	46,760
Cranberry gatherer	C. Thacher	48,136
Cranes	B. J. Burnett	46,213
Cranes, Elevating	J. T. Wright	49,579
Crank to machinery, Attaching	A. Westcott	47,885
Crank-pin boxes	T. Welch	49,185
Crank, wrist connections	J. Clayton	47,522
Crib, Bed, and sofa	S. Chapin	46,879
Crib and cradle	H. W. Eastman	46,091
Crimping machine, Boot	J. S. Landes	46,427
Crimping and shoeing forms	J. H. Jillson	50,074
Croquet mallets	L. Byrnes	51,016
Crucible	G. Nimmo	49,141
Crucible, Drying and preparing	G. Nimmo	48,713
Crucible, Moulding	G. Nimmo	49,140
Crucible for metallic baths	B. S. Stokes	49,009
Crupper	F. Howe	47,953
Crusher, Clod	W. Fenstermacher	45,705
Crushing machines	A. Hitchcock	50,247
Crushing and baling machine	J. Price, jr	51,212
Crutches	T. E. Gordon	45,709
Crutches	G. F. Alamby and J. G. Bugbee	47,265
Crutches	A. Bickel	47,695
Crutches	G. T. Alamby and J. G. Bugbee	51,677
Crutch-pot, Revolving	J. G. Bugbee	49,371
Cryptographic alphabet	E. H. Hawley	48,681
Cuffs, collars, &c., Manufacture of	A. Taylor	50,513
Culinary and household operations, Facilitating	H. S. Shepardson	50,779
Cultivating land by steam	J. Fowler, jr	45,892
Cultivators	I. Barber, jr	45,687
Cultivators	A. B. Cass	45,700
Cultivators	L. Sherwood	45,758
Cultivators	T. Wiles and J. McGinnis	45,782
Cultivators	W. D. Ament	45,807
Cultivators	A. Keck	45,833
Cultivators	C. Roberts	45,860
Cultivators	C. Roberts	45,861
Cultivators	E. H. Sawyers	45,866
Cultivators	E. C. Patterson	45,934
Cultivators	J. W. Fawkes	45,987
Cultivators	C. Lidren	46,116
Cultivators	S. Gulick	46,349
Cultivators	S. Henry	46,355
Cultivators	E. Minnick	46,376
Cultivators	J. W. Ingle and R. H. Wright	46,675
Cultivators	I. A. Palmer	46,383
Cultivators	J. Harper	47,017
Cultivators	J. M. Jenne	47,021
Cultivators	J. H. Thomas and P. P. Mast	47,055
Cultivators	G. F. Hassenpflug and G. Barnhart	47,105
Cultivators	T. J. Potts and P. C. Yost	47,332
Cultivators	L. B. Barton	47,380
Cultivators	R. Marsh	47,439
Cultivators	W. Rhodes and M. Porter	47,568
Cultivators	J. Hollingsworth	47,641
Cultivators	W. Bankson	46,537
Cultivators	L. D. Haughey	46,666
Cultivators	J. Mills	47,655
Cultivators	J. H. Gwin, H. Putsonpiller, and C. Gilbert.	46,657

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Cultivators	W. E. Bates	47, 693
Cultivators	J. Brewer	47, 699
Cultivators	P. S. Carhart	47, 618
Cultivators	E. Phifer	47, 904
Cultivators	S. G. Horning	48, 066
Cultivators	H. Howe	48, 068
Cultivators	W. G. Savage	48, 102
Cultivators	E. S. Gillies	48, 271
Cultivators	B. Holtz and W. Enoch	48, 281
Cultivators	H. M. Teasdale	48, 324
Cultivators	J. T. Bever	48, 358
Cultivators	C. Roberts	48, 445
Cultivators	H. S. Mead	48, 575
Cultivators	J. Lacey	48, 627
Cultivators	L. G. Youngs	48, 758
Cultivators	P. H. Allstott	48, 783
Cultivators	C. M. Jenne	48, 817
Cultivators	W. D. Ament	48, 884
Cultivators	F. C. Leffler	48, 959
Cultivators	G. B. St. John	49, 008
Cultivators	J. Brewer	49, 075
Cultivators	H. Ingraham	49, 111
Cultivators	G. Ekstrand and A. P. Cassell	49, 512
Cultivators	E. McEwen	49, 540
Cultivators	J. G. Page	49, 547
Cultivators	H. H. Webster	49, 667
Cultivators	G. Calkins	49, 715
Cultivators	J. A. Bardell	49, 845
Cultivators	L. B. Walker	49, 938
Cultivators	A. J. Manny	50, 018
Cultivators	J. P. Tostevine	50, 052
Cultivators	W. J. Burton	50, 093
Cultivators	A. Bouton	50, 217
Cultivators	W. H. L. King	50, 141
Cultivators	I. Denham	50, 229
Cultivators	R. McCorkell	50, 257
Cultivators	R. Thayer and J. McClelland	50, 403
Cultivators	L. B. Barton	50, 439
Cultivators	D. Churchhill and S. C. Brewer	50, 453
Cultivators	S. Hall	50, 930
Cultivators	J. Fernald	51, 031
Cultivators	H. Ingraham	51, 055
Cultivators	W. W. St. John	51, 096
Cultivators	J. T. Bever	51, 286
Cultivators	B. A. Grant	51, 306
Cultivators	J. Townsend	51, 365
Cultivators	J. Copeland	51, 428
Cultivators	J. H. Thomas, P. P. Mast, and T. Harding.	51, 494
Cultivators	D. Dennett	51, 567
Cultivators	J. Armstrong	51, 680
Cultivators	W. H. Howell	51, 721
Cultivators, Corn	J. Harper	47, 016
Cultivators, Corn	J. Chapman	49, 856
Cultivators, Hand	J. Naugle	46, 926
Cultivators, Horse-hoe	A. Webb	49, 354
Cultivators, Root, and weeder	C. Jarvis	45, 831
Cultivator, seeder, and roller, Combined	J. P. Long	46, 480
Cultivator, Teeth for	H. Francisco	46, 664
Cultivator, Wheel	A. P. Durant and D. M. Buckley	46, 550
Cultivator and corn planter, Combined	J. Palmer	48, 991
Cultivator and gang plough	S. H. Mitchell	46, 378
Cultivator and grain drills, Combined	E. Badlam	50, 438
Cultivator and harrow	T. Short	46, 274
Cultivator and harrow, Combined	E. D. and O. B. Reynolds	46, 025
Cultivator and planter	E. M. Wright	49, 204
Cultivator and planter, Combined	D. W. McGaffey	47, 029
Cultivator and potato digger, Combined	M. and J. W. Chandler	48, 616
Cultivator and seeder, Combined	P. Simhold	49, 661
Cultivator and seeder, Combined	C. Norwood	47, 975
Cultivator and seeder, Combined	S. Keller	48, 871
Cultivator, seeder, and potato planter, Combined	B. F. Field	50, 202
Cultivator and seeding machine, Combined	O. M. Pond	48, 590
Cups, Drinking, for the sick	M. P. Codman	50, 906
Cups, Funnel, and canteen plates	C. O. Farciot	46, 095
Cups, Grease	G. Hagenmeyer	49, 259
Cups, Lubricating	J. Sangster	48, 776
Cups, Oil	E. Weissenborn	45, 945
Cups, Oil	R. Poole	49, 352
Cups, Oil, Globe	V. Girond	49, 624
Cups, Oil, Tip for	T. P. Pfleghar and W. Shöllhorn	46, 586
Cups, Oil, ejecting	H. E. Stager	50, 183
Curry-brush and card	J. Voak	46, 510
Curtain, Window, Cord tightener for	M. Hay	51, 045

Invention or Discovery.	Name of Patentee.	No.
Curtain clasp	J. G. Whittier and T. M. Powell	50,193
Curtain fastening	J. R. Cook	49,381
Curtain fixture	J. Chase and W. S. Loughborough	47,392
Curtain fixture	J. B. Bailey	47,891
Curtain fixture	H. H. Trenor	49,571
Curtain fixture	P. Miles	50,149
Curtain fixture	E. M. Judd	51,594
Curtain knobs	C. Z. Kroh	49,634
Cutlery	C. L. Butler	51,648
Cutlery, edge tools, &c., Substance for making	T. H. Jenkins	51,724
Cutlery, Table	N. Mills	46,304
Cut-off, Variable	W. G. Pike	51,081
Cutter, Beef and vegetable	W. and J. T. Bird	51,288
Cutter, Bolt	E. Schlenker	48,594
Cutter, Bolt	R. Sischo	50,395
Cutter, Bolt	G. A. Rees	50,497
Cutter, Bolt	C. Draper	51,300
Cutter, Bread	F. Hüllhorst	46,003
Cutter, Bread	J. T. Plass	47,450
Cutter, Bread	J. Buckett	48,127
Cutter, Bread	S. D. Simmons	48,985
Cutter, Bread and meat	W. Budd and J. L. Husband	49,225
Cutter, Button-hole	F. G. Sanborn	46,028
Cutter, Button-hole	F. C. Leypoldt	48,962
Cutter, Cake, and rolling-pin	I. M. Pyle	50,732
Cutter, Cheese curd	H. Keeney	49,631
Cutter, Curd	C. Wadsworth	50,290
Cutter, Leather shoestring	J. A. Safford	47,340
Cutter, Meat	J. G. Perry	45,744
Cutter, Meat	W. G. Bell	45,788
Cutter, Meat	Le Roy S. Starrett	47,875
Cutter, Meat	R. V. Jones	49,762
Cutter, Meat	D. Bearly	50,984
Cutter, rule, square, blotter, and paper, Combination of	A. H. Trego	50,404
Cutter, Sod	W. A. L. Kirk	45,926
Cutter, Stalk, and seed sower, Combined	B. A. Grant	49,997
Cutter, Straw	J. C. Kennedy	45,925
Cutter, Straw	C. R. Hewett	45,997
Cutter, Straw	J. R. Whittemore	46,839
Cutter, Straw	E. F. Holloway	48,403
Cutter, Straw	B. Spencer	48,597
Cutter, Straw	J. Brockway	48,649
Cutter, Straw	G. T. Wright	49,190
Cutter, Straw	J. McMahel	49,478
Cutter, Straw	W. D. Schooley	49,554
Cutter, Straw	D. S. Kahler	50,366
Cutter, Straw	R. Leggett and R. Gittus	51,116
Cutter, Straw, and feed mixer, Combined	E. F. Bishop	47,386
Cutter, Tube sheet	D. E. Rice and W. Evered	47,983
Cutter, Vegetable	F. Hüllhorst	46,002
Cutter, Vegetable	J. Caldwell	49,499
Cutter, Vegetable	A. T. Bleyley	50,679
Cutter stock	J. Pease	45,742
Cutter for barrel heads	W. H. Bennett	50,677
Cutter for bread, meat, &c	D. Campbell	48,014
Cutter bars for harvesting machines	G. G. Taylor	45,879
Cutter for stone channelling machinery	G. J. Wardwell	51,273
Cutter for wood-turning lathes	J. Shannon	49,161
Cutter and corer, Apple	J. Wroten	50,197
Cutting cornstalks on the ground	T. W. McDill	48,704
Cutting machine, Band	W. U. Hoover	48,280
Cutting stalks	J. B. Ryder	48,312
Cutting stalks and stubble in fields preparatory to ploughing	G. W. Wilson	51,507
Cutting tool, Screw-thread	C. Dreher	50,808
Cutting wood gear	C. R. James	49,881
Cylinders, Carding, Cleaning	A. A. Hawley	49,679
Cylinders, Picking, of machines for disintegrating fibrous materials.	S. Boyden	46,294
Cylinders of tool-burring and similar machines	C. L. Goddard	49,625

D.

Dam, Coffer	A. Folsom	46,098
Damper	N. R. Ramsey	48,491
Damper	J. Knickerbocker	48,695
Damper	W. J. Johnson	50,133
Damper	A. E. Elmer	50,569
Damper, Draught, and stove-pipe ventilator	G. G. Woffe	46,414
Damper, Self-regulating	C. H. Davis	48,291
Damper, Smoke-pipe	E. M. Gardner	47,293
Damper, Stove	G. Asmus	50,216
Damper, Stove-pipe	F. Mackwitz and W. Frankfurth	46,007
Damper, Stove-pipe	J. L. Howard	46,670
Damper, Stove-pipe	H. Kipe	47,111

Invention or Discovery.	Name of Patentee.	No.
Damper, Stove-pipe	H. C. Brown	47, 923
Damper, Stove-pipe	J. Bradshaw and S. C. Wilson	48, 046
Damper, Stove-pipe	A. V. and A. F. Fletcher	48, 058
Damper, Stove-pipe	C. Kathan	48, 932
Damper, Stove-pipe	J. Fowler	49, 619
Damper, Stove-pipe	J. C. and A. B. Arlington	51, 409
Damper, Ventilating and check draught	J. A. Lawson	46, 249
Damper and ventilator	J. H. Littlefield	49, 899
Damper for violins	A. F. H. Braun	48, 648
Dancer, automatic	C. Chinnock	50, 452
Dead centre lifts	J. G. Gorman	46, 102
Decanter, Photographers'	E. W. Doty, E. A. and W. F. Stein	48, 664
Deflectors for photographic pictures	D. Shive	50, 284
Dental apparatus	W. H. Dibble	50, 461
Dentists, Plugging tool for, Self-feeding	M. Burchardt	50, 428
Dentists' pins, Heading	W. A. Duff and J. J. Griffith	46, 786
Dentures, Artificial	S. C. Taylor	50, 186
Deodorizing composition	A. Ranken	51, 216
Derrick, Hay	W. Minick	50, 150
Derrick, Portable	J. Greives	48, 808
Derricks and horse powers	D. Woodbury	45, 890
Desk	F. Baltz	47, 915
Desk, Folding	J. F. McNee	49, 428
Desk, School	W. Johnson	51, 727
Desk, School, and seat	J. P. Allen	46, 980
Desk and seat, School	W. Disbrow	47, 093
Desk and table	C. Baldwin	47, 378
Desk or table	W. Hemmer	48, 939
Desk or work table, Combined	J. Trevor	47, 058
Detectors, Low water	J. Yates	46, 173
Detectors, Low water	J. Cosfeldt	48, 158
Detectors, Low water	J. R. Supplee and R. K. Wright	51, 759
Detectors, Low water, for steam generators	D. C. Mead and C. Maggi	50, 660
Detergents, Manufacture of	S. Coburn	50, 336
Diagrams for testing the value of mutilated currency notes	L. Fox	49, 099
Diamonds, Glaziers', Setting and adjusting	M. Kleeman	47, 605
Dice, &c., Tool for making	C. B. Rogers	47, 571
Dice, Throwing	B. F. Bee	49, 700
Die, Roller	G. W. Wicks	48, 472
Die, Screw-cutting, Stock for holding	E. C. C. Kellogg	47, 898
Die, Screw-cutting, Stocks for holding	W. Pimlott	50, 731
Die stocks	J. Koberle	49, 687
Die stocks	W. and J. Holroyd	51, 048
Die for curving springs	A. Komp	50, 721
Die for cutting paper collars	G. K. Snow	51, 235
Die for cutting screw threads	B. S. Hill	47, 543
Dies for forging and shaping pistol frames	S. P. Legg	51, 327
Dies for furniture nails	W. H. Van Gieson	49, 808
Dies for making augers	E. N. Tracey	48, 633
Dies for making buttons	A. C. Sweetland	50, 185
Dies for making railroad-crossing points	H. Bains	51, 527
Dies for spike machines	S. Cameron	47, 928
Die and punch	W. K. Lewis	46, 681
Diggers, Rotary	H. Stanley	47, 996
Digging machine	C. H. Stratton	45, 877
Diseases, Treatment of, Applying heat and cold in the	J. Chapman	46, 535
Diseases, Treating, by condensed air	O. Stone	50, 641
Dish or cup, Batter	B. Wieland	49, 019
Dish washer	J. A. Hotchkiss and R. Eaves	48, 814
Distillates, Spirits and other, Measuring and testing	E. Payne	46, 058
Distilling	C. F. Frederici	48, 672
Distilling petroleum, &c	E. Braggins	46, 633
Distilling and brewing, Cooling and condensing apparatus used in.	D. E. Somes	46, 594
Distilling and evaporating apparatus	W. P. Wheeler	49, 328
Ditching machine	J. H. Snyder	47, 229
Ditching machine	N. Starbuck	49, 166
Ditching machine	A. W. Cox	49, 235
Ditching machine	W. H. Dalby	49, 239
Ditching machine	S. F. Jones	49, 276
Ditching machine	P. Lugenbell and J. S. Armstrong	51, 067
Dividers	S. A. Shurtleff	50, 173
Docks, Construction of	S. J. Seely	46, 146
Docks, Dry	J. Ryan	50, 390
Docks, Floating	E. Turner	47, 501
Docks, Lifting	Z. P. Leach	45, 724
Dolls, Arms for	C. F. Blakeslee	45, 691
Doll heads and other toys, Constructing	L. E. Sallee	46, 270
Doors, Elastic studs for	A. Eliaers	45, 984
Doors, Furnace	J. Wickersham	51, 638
Doors, Furnace, for boilers	J. Penketh	46, 423
Doors, Sliding, of Railway cars	A. G. Safford	49, 308
Doors, Spring, Catch for	J. C. Plumer	46, 697
Doors, Weather strip for	I. F. and A. A. Lynch	50, 016

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Doors, Weather strip for	G. H. Collins	51,296
Door fastener	E. H. Crane	46,451
Door fastener	G. W. Sayre	49,656
Door knobs, Extension	W. T. Munger	48,874
Door knobs, Fastening, to their shanks	M. V. Nobles	48,024
Door knobs, Fastening, to their shanks	M. V. Nobles	48,025
Door knobs, Rose for	M. V. Nobles	48,023
Door knobs, Seeuring necks to	T. Kennedy	45,836
Door mat	F. V. Noyes	49,780
Door threshold	C. Loring	51,066
Doors and windows, Rendering water-tight	W. C. Fuller	47,368
Door and window fastener	H. Jordon	51,059
Double-tree for earriages	J. Hoover	46,904
Dough, Aerating	E. Fitzgerald	45,706
Dough, Kneading	G. R. Baker	50,322
Dough, raising	T. Stockton	47,050
Dough kneader	T. C. Ring	48,979
Draught equalizer, Three-horse	E. J. Toof	51,632
Drag, roller, and seeding maehine, Combined	W. H. Hartman and S. Sheller	45,825
Drag and seeding maehine roller, Combined	W. H. Hartman	48,063
Draining machine, Centrifugal	A. N. Glass and H. W. Bartol	47,714
Drain tiles	J. D. Evans and T. J. Smedley	50,097
Drawers	J. Ware	50,308
Drawers, Coffee and tea	J. O. Shriner	49,929
Drawer fastening	J. Serrill	51,625
Draw-heads, Frames of, for railroad cars, Bending and puneh-ing.	P. L. Weimer	50,755
Draw-head plates, Bending and punching	P. L. Weimer	50,756
Drawing-board, Symmetrieal	C. D. Hillman	50,583
Drawing frame rolls	J. M. Stone	47,667
Dredging maehine for harbors and rivers	A. J. Gove	46,463
Dresses, Head, Waterfall, for ladies'	P. Walter	46,961
Dresses, Ladies', Finding waist and ehest measurement of	M. M. Turner	46,409
Dress faeing	J. A. Maekie	45,840
Dress proteetor, Ladies'	T. D. Day	46,218
Drills	C. L. Noé	46,815
Drills	A. Shiland	46,949
Drills	R. G. Wells	48,609
Drills	L. G. Marshall	48,819
Drills	L. G. Marshall	48,872
Drills	J. M. May	49,129
Drills	H. Loftie and E. Hinman	51,065
Drills, Boring	D. R. Erdmann	47,001
Drills, Expanding	F. Gleason	48,548
Drill, Grain	J. W. H. Doubler	46,523
Drills, Grain	B. Regan	46,821
Drills, Grain	J. Ingals	48,069
Drills, Grain	J. B. Amos	48,145
Drills, Grain	W. P. Penn, J. Geiss, and J. Brosius	48,432
Drills, Grain	J. D. Jones	49,117
Drills, Grain	J. D. Jones	49,882
Drills, Grain	J. D. Jones	50,134
Drills, Grain	J. H. Thomas and P. P. Mast	50,545
Drills, Grain	J. Davis	50,914
Drills, Grain	G. W. Farley	51,707
Drills, Grain, Adjustable drag bar for	J. D. Jones	49,883
Drills, Grain, and eultivator, Combined	E. Badlam	50,438
Drills, Grain, Drag bars for	J. H. Thomas and P. P. Mart	48,112
Drills, Grain, Drag bar and teeth for	J. D. Jones	50,135
Drills, Mounting	H. Haupt	47,541
Drills, Oil	L. H. Bowman	49,704
Drills, Oil well	E. Baker	49,065
Drills, Pneumatie	H. Haupt	46,668
Drills, Ratehet	E. H. Ashcroft	46,981
Drills, Reservoir, for tube wells	C. Houghton and R. S. Lewis	51,051
Drills, Rock	T. J. Lovegrove	46,757
Drills, Roek	T. J. Lovegrove	47,601
Drills, Roek	J. C. Diekey	47,805
Drills, Roek	J. Moulton	47,850
Drills, Roek	J. Y. Smith	47,870
Drills, Roek	G. Mulhaupt	48,301
Drills, Rock	J. M. May	48,823
Drills, Roek	J. C. Dickey	48,914
Drills, Roek	C. W. Johnson	49,034
Drills, Rock	O. B. Leatham	49,281
Drills, Roek	J. M. May	50,020
Drills, Rock	E. J. Graham	50,576
Drills, Rock	G. W. Smith and C. F. Herris	51,230
Drills, Roek	T. Mayhew	51,336
Drills, Roek	H. B. Williams and J. C. Wilson	51,376
Drills, Roek	J. M. Linseott	51,598
Drills, Roek	W. S. Fiekett	47,290
Drills, Roek	J. D. Butler	47,390
Drills, Seed	G. M. Murphey	47,153

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Drills, Seed	A. H. Wagner	48,117
Drills, Seed	W. B. Porter	48,433
Drills, tubes, &c., Extractor of, from oil wells	W. R. Hinsdale	49,628
Drills, Well	A. Crandall	48,524
Drills, Well	L. G. Peck	48,835
Drills, Well	J. Hofner	49,587
Drills, Wheat	G. King	47,024
Drills, Wheat	J. B. Crowell	48,262
Drills, Wheat	W. Rice	48,441
Drills, Wheat	J. F. Keller	50,140
Drill bit	W. W. Grier and R. H. Boyd	47,812
Drill gauge	N. C. Wells	51,248
Drill jar	C. A. Read	51,217
Drill rod attachment	R. S. Torrey	50,857
Drill for artesian wells	J. Shaw	49,798
Drill for boring rocks, &c	W. Bickel	48,785
Drill for boring wells	J. Sheffield	45,869
Drill for boring wells	D. H. Wisewell and G. W. Shaw	48,006
Drill for boring wells	C. Bates	48,892
Drill for boring wells	O. B. Latham	49,123
Drill for boring wells	C. F. Chase	49,717
Drill for wells	J. H. S. Tuck	49,177
Drill from wells, Extracting	J. Beoger	48,615
Drill for oil and other wells	W. G. Oliver	48,026
Drill and reamer for oil and other wells	J. Burnes	51,138
Drilling, Coupling tool for	J. and R. Moore	47,031
Drilling machines	W. Lyon	46,123
Drilling machine	J. S. Lauback	46,478
Drilling machine	J. Moulton	46,813
Drilling machine	J. Button	50,985
Drilling machine	A. Hatch	51,113
Drilling machine	A. P. Jackson and L. Thompson	51,189
Drilling machine, Rock	R. Hood	50,001
Drilling machinery	W. S. and S. B. Wells	48,467
Drilling and boring machine	H. Haupt	47,819
Drum, Stove-pipe	J. B. Hyzer	47,833
Drum, Stove-pipe	T. Whitson	47,887
Drum, Stove-pipe	G. D. Greenleaf	47,945
Drum, Stove-pipe	W. Kroeger	48,184
Drum, Stove-pipe	J. C. Paine	48,716
Drying apparatus	D. K. Boswell	50,895
Drying straw boards	W. O. H. Severson	50,280
Dumb bells	D. P. Butler	48,514
Dumb bells, Graduated	G. B. Winship	46,413
Duster for brick machines	C. Chambers, jr	45,974
Dust-pan and brush	C. H. Parker and G. Burnham	48,582
Dyes and colors, Preparation and manufacture of	G. H. Reed	50,495
Dyers, Coloring matter for, Producing	J. Eberhardt	46,888
Dyeing and printing, Aniline colors for, Preparing	A. S. L. Leonhardt	49,958
E.		
Ear-spoon, knife, and tweezer, Combined	B. C. English	50,106
Earthenware, Making	C. W. Saladee	47,043
Eave troughs	F. J. Emery	46,093
Eave-trough brackets	W. Yapp	49,466
Eccentric, Adjustable	D. F. Walker	46,737
Eccentric adjustment	J. M. Stone	46,278
Eggs, Desiccating	C. A. Lamont	50,421
Eggs, Desiccating	T. H. Quick	51,084
Eggs, Packing, Box for	E. M. Coombs	50,341
Eggs, Preserving	W. Hansford	47,202
Eggs, Preserving	C. A. Lamont	51,268
Eggs, Preserving	R. S. Rhodes and E. Whyte	51,480
Egg beater	M. G. Crane	48,525
Egg beater	H. Tilden	49,176
Egg beater	W. B. Smith	51,758
Egg boiler	A. Sharlow	47,228
Egg boiler	F. Ashley	49,062
Egg cooker	W. Loucks	48,190
Egg holder and packer	O. T. Bedell	48,507
Ejectors, Fluid	R. McGrath	47,654
Ejectors, Liquid	A. Brear	49,602
Ejectors, Oil	H. Carl	46,824
Ejectors, Oil	G. M. Mowbray	46,925
Ejectors, Oil	F. S. Pease	46,931
Ejectors, Oil	W. R. Greenleaf	47,011
Ejectors, Oil	F. S. Pease	47,034
Ejectors, Oil	G. L. Witsil and E. Burke	47,148
Ejectors, Oil	L. W. Turrell, S. Stanton, and L. C. Ward.	47,174
Ejectors, Oil	S. F. Schoonmaker	47,226
Ejectors, Oil	E. Crooker	47,399
Ejectors, Oil	G. E. Mills	47,444

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Ejectors, Oil	A. Brear	47,793
Ejectors, Oil	J. Y. Smith	47,871
Ejectors, Oil	J. Y. Smith	48,106
Ejectors, Oil	W. R. Greenleaf	48,170
Ejectors, Oil	W. W. Hubbell	50,710
Ejectors, Oil	R. Boeklen	51,008
Ejectors, Oil	N. S. Chappell	49,603
Ejectors for deep wells	J. Blaekie	50.893
Ejector for oil wells	G. M. Mowbray	45,849
Ejector for oil wells	G. M. Mowbray	46,485
Ejector for steam boilers	S. Maltby and C. Osborn	50,205
Ejectors for steam-boiler furnaces	J. N. Snowden and H. Wilkins	48,218
Eleetricity, Heating oil wells by	G. T. Parry and W. S. Warner	48,584
Elevators	O. B. Nimbs	48,851
Elevators	W. Sawyer	50,778
Elevators	J. H. Junkins	51,190
Elevator, Hay	E. J. Toof	47,671
Elevator, Hod	W. F. Totton	49,805
Elevator, Hydraulic	D. Bickford	51,129
Elevators, Water	A. Tarbox	46,403
Elevator, Water	J. H. Best	49,217
Elevators, Water	P. Perrine	49,914
Elevators, Water	H. H. May	50,944
Elevators, Well, Deep	T. Byrne	50,986
Elevator and excavator, Horse-power	S. T. Bishop and A. Stevely	49,965
Elevator and excavator, Horse-power	S. T. Bishop and A. Stevely	45,966
Elevator and exeavator, Horse-power	S. T. Bishop and A. Stevely	45,967
Elevator and excavator, Horse-power	S. T. Bishop and A. Stevely	45,968
Embroidery, Imitation of	B. Muller	51,668
Enamel	T. L. Oest	48,500
Enamels, paints, &c., Composition for	M. W. Brown	49,708
Engines, Air	D. Bickford	48,043
Engines, Air	S. Wilcox, jr	50,061
Engines, Air, Hot	M. G. Crane	46,084
Engines, Air, Hot	C. W. Baldwin	46,320
Engines, Air, Hot	H. Messer	46,689
Engines, Air, Hot	S. Wilcox, jr	47,759
Engines, Air, Hot	C. W. Baldwin	48,639
Engines, Alr, Hot	S. Wilcox, S. Wilcox, jr	50,062
Engines, Air, Hot	C. Stevens	50,506
Engines, Air, Hot	H. Kilbourne	50,875
Engines, Carbonic acid	N. H. Barbour	46,769
Engines, Carding	E. Leigh	50,211
Engines, Carding	H. L. Moulton	50,377
Engines, Carding	H. Marsden and T. Blamires	51,333
Engines, Carding, Doffing apparatus for	R. Lord and L. Hutton	46,120
Engines, Carding, Waste saving attachment to	A. A. Bennett	47,274
Engines, Carding, picking, and other similar, Means of feeding wool and other fibrous material to.	S. R. Parkhurst	47,976
Engines, Cylinder, Revolving	J. S. Foster	51,166
Engines, Fire	J. N. Dennison	46,219
Engines, Gas	P. Hugon	49,346
Engines, Hydraulic, and meter	J. S. Barden	50,651
Engines, Hydro-pneumatic	J. A. Huss	49,410
Engines, Hydrostatic	J. Hansbrow and B. B. Redding	46,795
Engines, Oscillating	W. H. King	48,563
Engines, Paper-mill, Bedplate for	O. Morse	47,849
Engines, Piston, Vibrating	J. B. Root	47,459
Engines, Rag, of paper-making machinery	T. Lindsey	47,739
Engines, Rotary	E. B. Adams, R. P. Trimble, and H. N. Adams.	46,201
Engines, Rotary	W. Avens and F. Bradley	46,436
Engines, Rotary	J. R. Ellis	46,457
Engines, Rotary	T. Merriam and J. Cushing	48,577
Engines, Rotary	D. Bickford	49,070
Engines, Rotary	H. Durre	49,391
Engines, Rotary	J. H. Warren	49,594
Engines, Rotary	S. M. Davis	49,610
Engines, Rotary	J. T. Warren	50,666
Engines, Rotary	E. Matteson	51,335
Engines, Screw, Releasing	A. Kieffer	48,339
Engines, Spring and weight piston, and stamping machine	E. F. and J. McFarland	51,737
Engines, Steam	D. Sexton	45,756
Engines, Steam	T. Welham	46,165
Engines, Steam	W. C. Hicks	46,470
Engines, Steam	D. H. Paullius	46,582
Engines, Steam	W. Huston	46,672
Engines, Steam	C. W. Isbell	46,800
Engines, Steam	J. Baird	47,377
Engines, Steam	H. Johnson	47,424
Engines, Steam	E. Danford	47,621
Engines, Steam	W. S. Phelps	47,748
Engines, Steam	R. H. Davies	47,766
Engines, Steam	G. B. Brayton	47,792

Invention or Discovery.	Name of Patentee.	No.
Engines, Steam	R. Wyatt	48,139
Engines, Steam	O. M. Stillman	48,321
Engines, Steam	D. Demming and D. A. Porter	48,529
Engines, Steam	W. Golding	48,549
Engines, Steam	W. M. Storm	48,777
Engines, Steam	G. J. Washburn	49,809
Engines, Steam	G. Yellott	50,983
Engines, Steam	L. Towne	51,496
Engines, Steam	T. A. DeBlois	51,565
Engines, Steam, Automatic stop motion for	J. Jackson, jr	47,357
Engines, Steam, Automatic stop motion for	J. Jackson, jr	47,358
Engines, Steam, Automatic stop motion for	J. Jackson, jr	47,359
Engines, Steam, Automatic stop motion for	A. Nadow	48,426
Engines, Steam, Automatic stop motion for	T. I. Bailey	51,412
Engines, Steam, Cut-offs for	J. H. Paine	46,020
Engines, Steam, Oscillating	D. Nation and T. B. Hall	49,293
Engines, Steam, Portable	W. Wright	49,334
Engines, Steam, Rotary	S. Harris	47,636
Engines, Steam, Rotary	J. W. Simonton and O. T. Struble	47,751
Engines, Steam, Rotary	H. T. Briggs	48,362
Engines, Steam, Rotary	H. T. Briggs	48,362
Engines, Steam, Rotary	G. Westinghouse	50,759
Engines, Steam, Rotary	J. Torrance	51,122
Engines, Steam, Rotary	M. Fletcher	51,165
Engines, Steam, Rotary	G. A. Lamb	51,389
Engines, Steam, Stuffing boxes for	V. Duterne	50,541
Engines, Steam, Valve gear for	C. E. Gage	47,492
Engines, Steam, Valve gear for	W. H. Stanton and A. D. Spencer	50,966
Engines, Steam, Valve gear for, Cut-off	H. O. Perry	46,932
Engines, Traction, for common roads	J. Frye	49,746
Engine head lights	S. M. Davies	46,998
Engine for operating rock drills	J. D. Butler	47,390
Engines for preparing paper stock	J. G. Fuller	46,893
Engraving, Bank-note	W. L. Ormsby	47,744
Engraving, Line, Producing, Heliographic and photographic, spectrum for.	F. Von Egloffstein	51,103
Engraving metallic plates	W. L. Ormsby	47,745
Envelope	E. L. Barrett	51,549
Envelope, Letter	T. S. Lambert	46,911
Envelope, Letter	J. G. Arnold	47,508
Envelope, Paper collar packing	G. K. Snow	48,848
Envelope and letter sheet, Combination of	C. Rowland	51,623
Epilobium, Fibres of, manufacture from the	R. B. Miller	46,922
Eraser	A. G. Shaver	46,032
Eraser, Mark, and pencil-point protector	J. B. Hodgskin	46,358
Eraser and burnisher	A. G. Shaver	49,538
Eraser and burnisher	A. G. Shaver	49,559
Eraser and pencil	W. R. Evans and L. D. Benner	47,406
Escapements for timepiece	D. J. Mozart	46,576
Evaporating and distilling apparatus	W. P. Wheeler	49,328
Evaporator	W. Canning	47,795
Evaporator	F. A. Lord	47,966
Evaporator	F. M. Love	48,628
Evaporator	T. and J. M. Scantlin	48,982
Evaporator	I. H. Palmer	48,990
Evaporator	J. Bogue	49,851
Evaporator	J. E. Moeller	51,206
Evaporator	J. C. Bell	51,683
Evaporator, Cane-juice	F. Groves	46,969
Evaporator, Cane-juice	W. Edgerton	49,392
Evaporator, Sorghum	J. H. Merrill	47,970
Evaporator, Sorghum	S. Heaton	48,397
Evaporator, Sorghum	J. Kindley	49,534
Evaporator, Sorghum	R. Bullard	49,974
Evaporator, Sorghum	E. R. Skinner	50,424
Evaporator, Sorghum	L. M. Myers	50,726
Evaporators, Sugar	T. C. Bartle	49,363
Evaporator for saccharine and other liquids	J. E. Morse	46,260
Evaporator and sirup boiler	L. Thomas	50,644
Excavators	J. Hodges	47,908
Excavators	J. C. Osgood	48,581
Excavators	H. W. Farley	48,669
Excavators and elevators, Horse-power	S. T. Bishop and A. Stevely	45,965
Excavators and elevators, Horse-power	S. T. Bishop and A. Stevely	45,966
Excavators and elevators, Horse-power	S. T. Bishop and A. Stevely	45,967
Excavators and elevators, Horse-power	S. T. Bishop and A. Stevely	45,968
Exercising machine	F. P. Thorpe	47,999
Extracts, desiccated and vegetable	W. J. Rand	48,719
Extracts, Fluid, Concentrated	N. S. Thomas	46,156
Extracts, Making	L. Smith	48,107
Extracts, Obtaining	B. F. Martin	46,809
Extracts, Obtaining, from vegetables, &c	J. Chilcott	47,393
Extracts from tan bark	L. W. Pingree	50,626
Extractor, Sediment, for steam boilers	E. Thayer	47,232

Invention or Discovery.	Name of Patentee.	No.
Extractor, Stump and grub	I. VanKerson	48,748
Extractor of tubes, drills, &c., from oil wells	W. R. Hinsdale	49,628
Eye-water	N. Pike	46,494
Eyes and hooks	J. P. Culver	45,979
Eyeletting machine	H. S. Lipman	45,727
F.		
Fabrics, Elastic	H. Hyves	46,674
Fabrics, Felted	E. Waite	46,837
Fabrics, Felted	E. D. McCracken	48,131
Fabrics, Felted	E. Waite	48,353
Fabrics, Netted or laced	H. A. Oesterle	51,744
Fabrics, Water-proof	T. Crossly	48,015
Fabrics, Water-proof	T. Crossly	48,762
Fabrics, Weaving, with button-holes therein	J. Conner	47,151
Fabrics, Weaving three-ply Jacquard	J. S. Ferguson	46,892
Fabrics for hats, bonnets, &c	H. Loewenberg	46,568
Fabrics for hats, Water-proof	W. E. Mahon	49,775
Fabrics for shirt lining and binding	C. Spannagel	50,317
Fagots, Construction of	F. W. Webb	47,077
Fans	B. M. Smith	51,228
Fans, Rotary	G. Leach	47,838
Fan blower	R. Porter	45,749
Fan blowers	C. G. Sargent	48,593
Fan blowers	W. Kendrick	51,321
Fan blowers	M. Smith	48,986
Farming implements, Attaching teams to	H. A. Cook	50,908
Faucets	R. Murray	45,949
Faucets	H. Strater, jr	46,726
Faucets	H. Strater, jr	46,727
Faucets	H. Strater, jr	46,728
Faucets	J. N. Smith	46,862
Faucets	J. Matthews, jr	48,421
Faucets	G. G. Percival	48,995
Faucets	N. Jenkins	49,527
Faucets, Beer	J. Miller	47,442
Faucets, Beer	A. Hallowell	48,273
Faucets, Beer	L. Poh	48,588
Faucets, Measuring	T. M. Girr	48,296
Faucets, Measuring	J. N. Smith	48,318
Faucets, Measuring	S. H. Wheeler	48,778
Faucet measures, Graduating	G. H. Henkel	48,556
Faucets, Stop valves for	W. Krull	49,894
Faucet and funnel, Combined	H. Mitchell	46,690
Faucets for oil and other liquids	J. D. Frary	46,555
Faucets and valves, Grinding	T. Shaw	48,216
Feather renovator	W. McArthur	48,702
Feed-mixer and straw-cutter, Combined	E. F. Bishop	47,386
Feed regulating mechanism for hoppers	J. S. Bodge	48,646
Feed-water apparatus	J. G. Washburn	49,941
Feed-water apparatus	G. A. Riedell	50,033
Felt, Drying, for paper-making machines	S. W. Baker	50,323
Fence	M. Brown and O. J. Shannon	46,541
Fence	E. Hollinger	46,799
Fence	J. K. and C. B. Clark	46,881
Fence	O. H. Woodworth	46,964
Fence	D. Harvey	47,203
Fence	W. Nevins	48,086
Fence	D. L. Pettigrew	48,774
Fence	S. Stanbro	49,313
Fence	W. D. Woodruff	49,820
Fence	T. R. Byrnes	51,691
Fence, Field	P. W. Kniskern	46,052
Fence, Field, and gate, Combined	J. C. Lee	50,605
Fence, Iron railing for	S. Crowell	47,801
Fence, Portable	J. M. May and E. B. Godfrey	48,701
Fence, Portable	S. Bryan	50,446
Fence, Wire	J. W. Norcross	45,852
Fence post, Boring	J. Agnew	51,676
Fender for horse's leg	S. Rossman	48,097
Ferrules for boiler tubes	G. W. Durall	49,987
Fertilizer	J. D. Whelpley	49,943
Fertilizer	O. Lugo	50,940
Fertilizers, Distributing	J. M. Wiltsie	46,515
Fertilizers, Distributing	J. H. Thomas and P. P. Mast	47,138
Fertilizers, Manufacture of	F. Klett	49,891
Fertilizers to growing plants, Distributing	D. C. Colby	48,155
Fetter for animal	M. E. Burlingame	49,081
Fibres, Vegetable, Disintegrating	C. Heaton	49,106
Fibres, Vegetable, Removing mineral, gummy, and resinous substances from.	A. Mencel	47,068
Fibres, Vegetable, and cloth for bleaching, Preparation of	G. W. Billings	46,774
Fibres, Vegetable, Separating gummy and silicious matter from	C. Heaton	47,301

Invention or Discovery.	Name of Patentee.	No.
Fibres, Vegetable, for the manufacture of paper pulp	J. W. Dixon	51,706
Fibres of epilobium, Manufacture from the	R. B. Miller	46,922
Fibrous material, Disintegrating, Picking cylinders of machines for.	S. Boyden	46,294
Fibrous material for spinning, &c., Rolls for preparing	D. Read	48,134
Fibrous plants from pulpy matter, Separating	J. R. Beckwith	51,413
Fibrous and porous materials, Impregnating	S. Gwynn	46,466
Field marker for planting	W. Goltry	48,551
Fifes and flutes	A. H. Stratton	47,582
Files, Cutting	A. Weed	46,865
Files, Grinding	I. H. Spencer	49,042
File, Letter	J. W. Hauxhurst	50,580
File, Letter or invoice	R. Boeklen	50,652
File, Newspaper	W. Burnet	46,072
File, Paper and letter	H. Riggs	51,520
Files, saws, &c., Tempering	J. Small	49,451
File blanks, Forging	W. S. Nicholson	45,850
File-cutting machine	J. D. Croker	46,545
File-cutting machine	M. G. Crane	46,780
File-cutting machine	J. K. Barker	49,214
File-cutting machine	J. Jervis	50,595
File-cutting machine	M. D. Whipple	50,647
File holder	W. C. McGill	51,470
Filings, Metallic, Separating	J. Johnson	46,005
Filters	C. Cleminshaw	46,079
Filters	E. Andrews	47,074
Filters	M. A. Espirat and E. Sause	47,251
Filters	T. Simmons	47,261
Filters	H. H. Tilden	49,013
Filters, Water	N. Downes	46,646
Filters for artesian wells	J. Clary and E. B. Forrey	50,686
Filter and cooler, Combined	L. Scharff	51,485
Filter and cooler	W. P. Dickinson	51,703
Filter for oils	P. Hall	48,172
Fire alarm	C. Dion	49,686
Fire annihilator	H. Baragwanath and M. Van Visker	51,284
Fire-arms, Ball screw for	A. D. Wilzlesben	46,220
Fire-arms, Bayonets to, Attaching	H. Berden	45,901
Fire-arms, Breech-loading	F. Clark	45,701
Fire-arms, Breech-loading	J. Rider	45,797
Fire-arms, Breech-loading	C. G. Saez	45,801
Fire-arms, Breech-loading	H. Berden	45,899
Fire-arms, Breech-loading	I. M. Millbank	46,125
Fire-arms, Breech-loading	J. A. Miller	46,259
Fire-arms, Breech-loading	J. Rider	46,532
Fire-arms, Breech-loading	F. W. Howe	46,671
Fire-arms, Breech-loading	I. Sutvan	46,866
Fire-arms, Breech-loading	D. Williamson	46,977
Fire-arms, Breech-loading	J. W. Cochran	47,088
Fire-arms, Breech-loading	C. Chabot	47,163
Fire-arms, Breech-loading	A. M. White	47,350
Fire-arms, Breech-loading	W. H. Elliot	47,372
Fire-arms, Breech-loading	J. W. Cochran	47,396
Fire-arms, Breech-loading	C. E. Sneider	47,755
Fire-arms, Breech-loading	W. H. Elliot	47,809
Fire-arms, Breech-loading	W. H. and G. W. Miller	47,902
Fire-arms, Breech-loading	B. F. Joslyn	48,073
Fire-arms, Breech-loading	W. Morgenstern	48,133
Fire-arms, Breech-loading	B. F. Joslyn	48,288
Fire-arms, Breech-loading	E. Maynard	48,423
Fire-arms, Breech-loading	M. L. M. Descoutures	49,057
Fire-arms, Breech-loading	E. Maynard	49,130
Fire-arms, Breech-loading	W. F. Wilson and H. Flather	49,463
Fire-arms, Breech-loading	E. Allen	49,491
Fire-arms, Breech-loading	L. W. Broadwell	49,583
Fire-arms, Breech-loading	C. Chabot	49,718
Fire-arms, Breech-loading	J. D. Dougall	49,844
Fire-arms, Breech-loading	E. S. Allin	49,959
Fire-arms, Breech-loading	T. L. Sturtevant	50,045
Fire-arms, Breech-loading	C. Howard	50,125
Fire-arms, Breech-loading	N. S. Clement	50,334
Fire-arms, Breech-loading	C. Howard	50,358
Fire-arms, Breech-loading	W. Richards	50,432
Fire-arms, Breech-loading	J. Stillman	50,507
Fire-arms, Breech-loading	J. V. Der Poppenburg	50,670
Fire-arms, Breech-loading	H. F. Wheeler	50,760
Fire-arms, Breech-loading	F. B. Prindle	51,213
Fire-arms, Breech-loading	F. Schopp	51,225
Fire-arms, Breech-loading	W. Tibballs	51,243
Fire-arms, Breech-loading	J. Davis	51,258
Fire-arms, Breech-loading	W. H. and G. Miller	51,739
Fire-arms, Breech-loading, Cartridge retractor for	F. Beals	46,207
Fire-arms, Breech-loading, Cartridge retractor for	E. Allen	46,617

Invention or Discovery.	Name of Patentee.	No.
Fire-arms, Breech-loading, Cartridge retractor for	G. P. and G. Foster	49,994
Fire-arms, Breech-loading, Magazine	H. F. Wheeler	46,286
Fire-arms, Breech-loading, Rifling	H. Berdan	45,898
Fire-arms, Cartridge retractor for many-chambered	W. C. Dodge	45,912
Fire-arms, Converting muzzle into breech loading	C. E. Sneider	46,054
Fire-arms, Hammer of, Safety guard for the	H. E. Gibbon	46,100
Fire-arms, Implement for detaching and replacing the parts of	A. Grillet	47,715
Fire-arms, Magazine	V. Fogerty	46,459
Fire-arms, Magazine	E. Stabler	46,828
Fire-arms, Magazine	B. F. Parkinson	48,201
Fire-arms, Magazine	G. W. Hughes and J. G. Pusey	49,409
Fire-arms, Magazine	J. Gray	48,622
Fire-arms, Many-chambered	W. H. Elliot	50,232
Fire-arms, Many-barrelled	W. H. Elliot	51,440
Fire-arms, Percussion-cap holder for	R. S. Pickett	47,127
Fire-arms, Rear sight base for	F. W. Howe	46,000
Fire-arms, Revolving	W. C. Dodge	45,983
Fire-arms, Revolving	R. H. Plass	46,023
Fire-arms, Revolving	W. H. Elliot	46,225
Fire-arms, Revolving	B. F. Joslyn	46,243
Fire-arms, Revolving	P. Haughian	46,562
Fire-arms, Revolving	C. E. Sneider	46,612
Fire-arms, Revolving	A. Guerriero	47,252
Fire-arms, Revolving, Cylinder pin of	W. H. Elliot	47,707
Fire-arms, Revolving	G. H. Gardner	47,712
Fire-arms, Revolving	J. H. Vickers	47,775
Fire-arms, Revolving	B. F. Joslyn	48,287
Fire-arms, Revolving	L. C. Rodier	48,775
Fire-arms, Revolving	S. Crispin	50,224
Fire-arms, Revolving	H. Smith and D. B. Wesson	51,092
Fire-arms, Revolving	W. Mason	51,117
Fire-arms, Revolving	J. Rider	51,269
Fire-arms, Revolving	E. T. Starr	51,628
Fire-arms, Revolving	G. C. Bunsen	51,690
Fire-arms, Revolving	J. Reid	51,752
Fire-arms, Revolving, Rammer for	F. D. Newbury	46,131
Fire-arms, Rifling	A. Frauth	50,433
Fire-arms, Self-loading	C. M. Spencer	45,952
Fire-arms, Self-loading, or magazine	W. Fitzgerald	45,919
Fire blank	H. H. Baker	45,956
Fire-chamber cleaner	G. R. Moore	45,933
Fire escape	R. Wyatt	48,333
Fire escape	C. J. and E. W. Jones	50,596
Fire-kindling apparatus	J. Smith	50,503
Fire machines	C. L. Crowell	49,387
Fireplace	W. H. James	47,423
Fireplace	M. D. Wellman and J. Old	48,752
Fireplace, Movable, with gridiron attachment	J. W. Wetmore	47,176
Fire plugs	J. Fricker	50,235
Fire pots for stoves, &c	W. Ennis	47,895
Fire pots for stoves, furnaces, &c	P. P. Stewart	47,049
Fire-proof composition	N. E. Blake	47,275
Fire-shrinking machine	J. A. Lloyd	46,118
Fire-shrinking machine	M. Scott	50,171
Fire-sprinkling machine	J. M. Kellogg	50,716
Fire and steam heating extinguishing apparatus	C. S. Brown	46,328
Fish, Curing and drying	B. Robinson	48,723
Fish decoy	I. B. Quinby	51,120
Fishing-line sinkers	E. F. Deeker	46,453
Fish, meat, fruit, &c., Preserving	J. G. Staunton	45,765
Flask	W. T. Fry	51,303
Flask pin	B. B. Whaley	47,059
Flax, Cleaning, drying, and cutting	E. Phillips	47,604
Flax, &c., Gathering and loading	G. W. Hatch	48,064
Flax, hemp, &c., Fibres of, Separating	J. B. Fuller and J. P. Upham	47,539
Flax, hemp, jute, grass, &c., Treating	S. M. Allen	48,782
Flax, hemp, &c., for the manufacture of paper pulp, Treating	M. A. Cushing	50,419
Flax, hemp, &c., Preparing for spinning	J. B. Fuller and J. P. Upham	47,538
Flax, Preparing	J. B. Fuller	51,652
Flax, Pulling	A. Burchard	46,857
Flax-pulling machine	J. Silvers	48,731
Flax, Separating	C. S. Davis	47,190
Fleece folders	C. W. Rudgers	50,040
Floats, Shoemakers'	J. W. Foard	48,544
Flood-gate, Revolving	J. DuBois	45,913
Floor cloths	C. L. Lawrence	49,537
Floor covering	A. H. Platt	45,937
Flour, Bolting	J. E. Madigan	46,919
Flour bolts	F. S. Thayer	47,233
Flour bolts	S. Heflebower	48,684
Flour bolts	J. Beall and L. K. Shaffer	49,365
Flour bolts	J. E. Huston	49,629
Flour bolts	S. Lewis	50,371
Flour bolts	J. Brown	51,548

Invention or Discovery.	Name of Patentee.	No.
Flour packer	I. Cook	49,859
Flour sacks	J. M. Hurd	51,722
Flour and meal for transportation, Preparing	E. B. Larcher	48,697
Flowers, Natural, Preserving and restoring	A. J. Knox	46,247
Flue cleaners	N. W. Wheeler	51,249
Fluid, Printing	E. Whitefield	48,471
Fluid, Writing	H. C. Baildon	49,843
Fluid ejector	J. Wood	48,861
Fluid extracts, Concentrated	N. S. Thomas	46,156
Flutes and fifes	A. H. Stratton	47,582
Flyers for roving frames	T. Mayer	46,921
Focusing plate holder	S. W. Burcaw	50,555
Fodder, Cutting and grinding	I. Fulton	49,396
Folders, Fleece	C. W. Rudger	50,040
Food, Preservation of, Buildings or rooms for the	D. E. Somes	46,276
Food for transportation, Preserving	M. Brune	48,898
Foot rest	C. S. Adams	48,638
Foot warmer	A. Eckert	46,649
Foot warmer	C. L. Palmer	47,327
Foot warmer	A. Palmer	49,433
Foot warmer	H. Hock and J. Zilz	50,123
Foot warmer	J. J. Andrews	51,534
Foot warmer and spittoon, Combined	G. B. Clark	47,280
Forge	C. N. Taylor and E. J. Holmes	47,467
Forge, Blacksmiths'	J. H. Gould	46,792
Forge, Portable	J. H. Dickerson	45,911
Forging apparatus	E. F. McFarland	45,928
Forging apparatus	E. A. Raymond	51,267
Forging machine	J. C. Jewell	48,560
Forks, Hay	W. F. Rundell	47,042
Forks, Hay	C. L. Driesslein	48,665
Forks, Hay, Horse	D. B. Clements	46,047
Forks, Hay, Horse	J. L. Ripley	46,394
Forks, Hay, Horse	J. A. Cowles	46,450
Forks, Hay, Horse	A. M. Halsted	46,664
Forks, Hay, Horse	M. D. Myers	46,814
Forks, Hay, Horse	R. Reynolds and C. Young	47,982
Forks, Hay, Horse	R. Reynolds and C. Young	48,029
Forks, Hay, Horse	J. R. Cadwell	49,083
Forks, Hay, Horse	N. D. Hinman	49,405
Forks, Hay, Horse	D. M. Garrett	49,621
Forks, Hay, Horse	O. P. Secor	49,834
Forks, Hay, Horse	S. F. Leavitt	49,897
Forks, Hay, Horse	S. H. Wheeler	50,210
Forks, Hay, Horse	H. Totten	50,516
Forks, Hay, Horse	G. F. Strong	51,490
Forks, Hay, Horse	A. Y. Case	51,555
Forks, Hay-elevating	W. S. Newton	46,018
Fork, knife, and spoon-holder	G. L. Morse and L. M. Herrick	46,692
Fork, Wire, for toasting, &c	T. G. Harold	46,235
Fork and knife, Combined	T. B. Thorpe	46,832
Fork and sharpener, Combined	F. C. Beach	51,285
Forms, Shaping and crimping	J. H. Jellison	50,074
Fountain, Refreshment, Portable	A. J. Ohmer	51,612
Fountain and seat, Combined rotating, for barber shop	J. Meyer	49,539
Frames, bottles, &c., Composition for	J. T. Peet	49,147
Frames, Hot, Metallic skeleton	A. Komp	47,431
Frames, Oval, Jointing	J. E. Rodgers	46,268
Frames, Picture, Card	R. W. Potter	46,699
Frames, Printing, Photographic	S. K. Jones	49,531
Frames, Signal	W. A. Sprague	47,230
Frames for gathering skirts	L. M. Rose	46,944
Frames for portable houses	J. Morgan	45,734
Frames and mouldings	G. Henze	49,829
Freezer, Ice-cream	J. S. Shattuck	49,797
Freezer, Ice-cream	A. W. Edwards	51,160
Freezer, Ice-cream, Bottom for	E. M. Manigle	51,468
Freight, Unloading and storing	H. A. Whitney	48,330
Friction, Diminishing	C. Badin	49,685
Friction clutch	W. H. Brown	51,134
Fruit, meat, fish, &c., Preserving	J. G. Staunton	45,765
Fruit, &c., Preserving	E. C. Roberts	46,707
Fruit box or basket	J. H. Doolittle	49,866
Fruit dryer	D. Lippy	48,570
Fruit dryer	A. Snyder	48,733
Fruit-drying frames	G. Gardner	50,113
Fruit-drying house	J. Billings	40,414
Fruit gatherer	J. A. Little	46,916
Fruit gatherer	A. Selover	47,044
Fruit jar	J. Johnson	47,730
Fruit picker	B. C. Phelps	47,364
Fruit trees, &c., Preventing insects from injuring	C. Fisher	49,869
Fruit slicer	J. H. Reed	51,479
Fruit masher, or lemon squeezer	W. H. Armington	50,199

Invention or Discovery.	Name of Patentee.	No.
Fuel, Artificial	W. Halsted	45, 922
Fuel, Artificial	F. C. Payne	45, 935
Fuel, Artificial	G. R. Gladding	47, 296
Fuel, Artificial	J. A. Roth	47, 337
Fuel, Artificial	H. Redlich	48, 439
Fuel, Artificial	R. B. Bayard	48, 506
Fuel, Artificial	C. Korff	48, 564
Fuel, Artificial	S. D. Hovey	50, 588
Fuel, Peat for, Preparing	A. Betteley	49, 218
Fuel-saving device and heating	D. C. Colby	47, 489
Fulminating compound	H. B. Stockwell	48, 460
Fumigator	S. Vanstone	50, 752
Funnels	C. L. Lockman	46, 255
Funnels	J. Q. Hill	49, 522
Funnels	C. Jones	51, 515
Funnel, cup, and canteen plates	C. O. Farciot	45, 095
Funnels, Measuring	J. M. Estabrook	49, 738
Funnel spouts, Corrugated	J. Walton	46, 162
Funnel and faucet, Combined	H. Mitchell	46, 690
Furnace	J. Leeds	47, 963
Furnace, Air, Hot	B. Holly	46, 107
Furnace, Air, Hot	J. H. Shedd and B. Worcester	50, 739
Furnace, Annealing	E. Bennett	48, 761
Furnace, Boiler	E. C. Strange and G. R. Huntley	46, 725
Furnace, Boiler	J. A. Miller	47, 118
Furnace, Boiler	T. H. Clark	47, 619
Furnace, Boiler	T. B. Wilson and W. R. Shaw	48, 125
Furnace, Boiler	P. Smith	49, 662
Furnace, Boiler, Steam	S. B. Dexter	49, 241
Furnace, Boiler, Steam, Ejectors for	J. N. Snowden and H. Wilkins	48, 218
Furnace, Cupola	A. Pevy	50, 623
Furnace, Cupola	A. A. Lincoln	50, 769
Furnace, Doors for, Water	J. Rogers	48, 446
Furnace, Doors for	N. L. Sibley and B. Shiverick	49, 041
Furnace, Glass	J. Carrol	48, 903
Furnace, Grate bars for, Casting	J. A. Miller	46, 127
Furnace, Heating, Air	G. W. Wilson	46, 601
Furnace, Hot-air	J. A. Miller	47, 443
Furnace, Isomeric diaphragm, for desulphurizing	D. Minthorn	50, 836
Furnace, Portable kettle	J. Murdock	48, 302
Furnace, Puddling	W. and J. Groves	48, 390
Furnace, Puddling	J. Williams	50, 319
Furnace, Puddling	D. and J. Hall	50, 929
Furnace, Puddling	P. Keenan and E. O'Conner	50, 937
Furnace, Puddling, Fixing for	H. McDonald	50, 483
Furnace, Reverberatory	W. Kendrick	50, 718
Furnance, Smelting	W. Quam and W. T. Smith	51, 266
Furnaces, Steam blower for	J. A. Bassett	49, 823
Furnaces, Stoves, &c., Fire-pot for	P. P. Stewart	47, 049
Furnaces, Tinman's	E. B. Gibbud	49, 517
Furnace, Welding and steam-boiler, Arrangement of	H. J. Davidson	50, 562
Furnace for converting brass into steel	T. S. Blair	51, 289
Furnace for burning gas	C. Schinz	46, 536
Furnace for boiling iron	C. D. Baker	48, 355
Furnace for desulphurizing and treating auriferous and other metallic ores	M. B. Mason	45, 804
Furnace for finishing sheet iron	W. D. Wood	46, 841
Furnace for melting metals	W. A. Sweet	48, 739
Furnace for puddling iron	N. S. Snedeker	49, 565
Furnace for steam boilers, &c., Hydrocarbon blowers for	H. Gerner	48, 806
Furnace for treating ore	W. Kendrick	50, 717
Furniture, Caster for	R. J. Beardsley	46, 334
Furniture, Caster for	M. L. Babb	48, 146
Furniture, Caster for	P. B. Holmes	50, 249
Furniture, Spring caster for, Combination	J. H. Wilhelm and F. G. Ensign	51, 770
Furrowing and pulverizing device	C. Shabley	51, 757
Fuze, Blasting	T. H. Walton	45, 774
Fuze, Concussion, for explosive shells	G. P. Ganster	48, 167
Fuze, Concussion, for explosive shells	J. A. Curran	47, 803
Fuze, Safety	A. F. and J. H. Andrews	51, 679
Fuze, Time, for explosive shells	G. Wright	46, 965
Fuze hood for explosive shells	T. Taylor	47, 231
Fuze for blasting	J. S. Bickford	47, 677
Fuze for shells	E. Estabrook	45, 986
G.		
Gaining machine, Power	H. Bickel	48, 042
Gaiters, Spring	F. M. Blodgett	48, 897
Gaiter boots	S. Babbitt	46, 622
Gaiter boots	T. Powell	50, 030
Galley, Ship's	W. Young	46, 313
Galvanic batteries	J. Blackie	49, 824
Game	B. E. Mead	45, 731

Invention or Discovery.	Name of Patentee.	No.
Game boards	J. T. Edson	47,491
Game boards	J. Smith and E. M. Nutter	47,867
Gardening implement	R. W. Porter and J. F. Spaulding	50,305
Garment measuring	J. B. West	45,780
Gas	C. Noble	48,714
Gas, Burning, Furnace for	C. Schinz	46,536
Gas, Carbonic acid, Generating	P. and F. Hinkel	47,205
Gas, Carburetting	S. T. McDougall	45,729
Gas, Generating	J. Bagot	50,548
Gas, Illuminating	W. Elmer	45,915
Gas, Illuminating	J. Jennings	46,473
Gas, Illuminating	O. Collins	49,505
Gas, Illuminating	E. A. Pond	50,385
Gas, Illuminating, Flexible tubing for	W. B. S. Taylor	46,507
Gas, Lighting	T. W. Houchin	47,207
Gas, Manufacture of	S. C. Salisbury	47,986
Gas, Pressure and delivery of, Regulating	W. A. Simonds	49,449
Gas, Purification of	A. A. Croll	47,160
Gas and other retorts	J. Chilcott	45,908
Gas-burner chimney	J. Stratton	49,010
Gas engines	P. Hugon	49,346
Gas fitter's clamp	J. Peace	48,431
Gas fitter's hook blank	E. P. Gleason	49,257
Gas heater	J. H. Jones	47,426
Gas heater	J. Q. Birkey	50,678
Gas heater, or blowpipe, for heating soldering irons	E. A. Leland	46,527
Gas lamp posts, Street	J. T. P. Hunt	45,717
Gas light, Fulminate	H. B. Stockwell	48,459
Gas lighter, Electric	E. J. Frost and G. A. Lawrence	49,254
Gas-light multiplier	J. F. Boynton	49,705
Gas-lighting device	J. G. Harper	48,932
Gas metres, Dry	N. Tufts, jr.	49,935
Gas-pipe coupling	D. L. Freeborn	50,111
Gas regulator	C. M. Cresson	47,189
Gas regulator	J. S. Wood	49,188
Gas regulator	W. A. Simonds	51,664
Gas retorts, Head, neck, and connections of, Constructing the	J. Chilcott	49,231
Gas retorts, Incrustation from, Removing	A. J. White	49,329
Gas from petroleum, Generating	D. M. Graham	47,634
Gates	G. Stovel	46,954
Gates	F. Ball	46,985
Gates	W. Tallman	48,322
Gates	J. M. May	49,286
Gates	S. L. Fisher	49,615
Gates	S. Grenell, G. Bez, and H. C. Stoll	49,753
Gates	S. M. Gillett	49,873
Gates, Automatic folding	J. B. Mahana	45,842
Gates, Canal, Lock-valves for	W. W. Jerome and L. K. Cole	47,643
Gates, Canal-lock, Raising	W. Thomas	47,138
Gates, Construction and hanging	J. Healy	46,667
Gates, Farm	J. Martin	46,920
Gates, Farm	J. G. Hunt	47,307
Gates, Farm	J. Lee	47,840
Gates, Farm	W. F. Smelley	47,994
Gates, Farm, Hanging and latching	J. Kinman	47,429
Gates, Fence	T. Raymond	45,858
Gates, Fence	T. Raymond and A. Miller	48,309
Gates, Flood	A. Ralston	48,977
Gates, Flood, Revolving	J. Du Bois	45,913
Gates, Flood, for mill dams	M. Colton	46,883
Gates, Hanging	T. S. Minniss	46,377
Gates, Railway	S. N. Cushing	46,884
Gates, Self-acting	J. Lee	48,698
Gates, Water-wheel, Governors for	J. H. Wooster	46,430
Gate fastening	J. P. Woodcook	49,819
Gate fastening	W. Broomhal	51,417
Gate latch	J. Leonard	48,292
Gate posts	G. O. Hutson	50,005
Gate and field fence, Combined	J. C. Lee	50,605
Gauges, calipers, and rules, Connecting	N. H. Bundy	49,337
Gauges, Carpenters'	G. Miller	45,932
Gauges, Carpenters'	M. Horton	47,824
Gauges, Carpenters'	B. T. Currier	48,663
Gauges, Carpenters'	J. McCrum	48,703
Gauges, Carpenters'	G. Miller	50,448
Gauges, Conical turning	M. Bowker	49,073
Gauges, Diaphragm pressure	R. C. Robbins	48,877
Gauges, Drill	W. C. Wells	51,248
Gauges, Hemming, for sewing machines	W. Gaskill	46,790
Gauges, Steam	T. Shaw	47,578
Gauges, Steam	C. Barnes	49,961
Gauges, Steam	H. W. Evans	50,107
Gauges, Steam	C. F. Hunt	50,581
Gauges, Steam	C. C. Smith	50,991

Invention or Discovery.	Name of Patentee.	No.
Gauges, Steam pressure	E. H. Ashcroft	45,685
Gauges, Steam pressure	E. A. Wood	45,786
Gauges, Steam pressure	J. Davis	47,936
Gauges, Steam pressure	J. P. Wigal	48,331
Gauges, Steam pressure	J. D. Ingram	49,033
Gauges, Steam pressure	C. C. Schmidt	50,208
Gauges, Water, for steam generators	T. Poore	45,856
Gauges, Water, for steam generators	H. Belfield	49,366
Gauge cocks	C. T. Woodman	51,274
Gauge cocks	J. Broughton	51,418
Gauge cocks, &c	E. A. Walker	49,016
Gauge cocks, Steam	V. Giroud	49,623
Gauges for setting the pitch to wagon axles	J. Horton	48,928
Gauging and enlarging casks	W. C. Cooper	50,689
Gear, Shifting	C. D. Rogers	45,864
Gear, Wood, Cutting	C. R. James	49,881
Gear, Wood, Cutting	J. Jackson	51,458
Gear, Swinging, for threshing machines	J. Kline and V. Beeker	45,838
Gear cutting rules	C. B. Long	47,436
Gearing, Belt, Anti-friction wheels for	D. Eldridge	49,614
Generators	I. E. Craig	47,933
Generators	G. I. Washburn	49,810
Generators, Steam	B. McGinnis	46,193
Generators, Steam	E. Thayer	47,053
Generators, Steam	E. Thayer	47,054
Generators, Steam	R. and H. V. Faries	47,627
Generators, Steam	E. Thayer	49,172
Generators, Steam	J. Harrison, jr	49,263
Generators, Steam	H. B. Myer	49,431
Generators, Steam	H. C. Sergeant	49,556
Generators, Steam	C. Crawford	49,728
Generators, Steam	J. D. Beers	49,847
Generators, Steam	E. Faron	50,109
Generators, Steam	G. Sill	50,174
Generators, Steam	E. Danford	51,026
Generators, Steam	S. Wilcox, jr	51,395
Generators, Steam	J. Connery	51,510
Generators, Steam	J. Samuels	51,521
Generators, Steam, Cast-iron	J. Chilcott	48,518
Generators, Steam, Grate bars for	E. G. Blakeslee and A. Mansel	50,327
Generators, Steam, Low-water detector for	D. C. Mead and C. Maggi	50,660
Generators, Steam, Safety valves for	S. G. Baker	49,069
Generators, Steam, Safety valves for	R. Wood	50,376
Generators, Steam, Safety valves for	S. Nowlan	51,610
Generators, Steam, Water gauges for	H. Belfield	49,366
Gins, Cotton	W. B. Emery	47,626
Gins, Cotton	F. Durand	50,080
Gins, Cotton	C. Brakell	51,402
Glass, Coating with platinum	L. P. Angenard	46,767
Glass, Corrosion or staining the surface of, Preventing the	W. B. Richard	47,040
Glass, Drinking	J. S. and T. B. Atterbury	50,437
Glass, Looking, Making	L. P. Angenard	46,062
Glass, Manufacture of	J. Best	45,809
Glass, Manufacture of	G. Matthewman	50,373
Glass, Manufacture of	H. Napier and J. J. Hollins	51,343
Glass, Ornamenting, Engine for	A. Schwitter	49,555
Glass, Polish for	J. M. Warren	50,406
Glass, Preventing the breaking of, by exposure to heat	E. Thayer	49,171
Glass, Window	T. D. Stetson	49,167
Glass cases	E. D. Kinney and C. Wright	48,693
Glass furnaces	J. Carroll	48,903
Glass pots	D. McAfee	51,068
Glass pitchers, Silvering	J. W. Haines	47,101
Glassware, Manufacture of	J. W. Haines	47,948
Glass presser-feet of sewing machine	R. E. Peterson	47,978
Glass in umbrellas, Inserting	E. A. Pond and M. S. Richardson	50,492
Glass or porcelain picture, Printing frames for	W. J. Kuhns	51,323
Glazing and starching cords, braids, &c	D. McInroy	51,471
Glucose, Manufacture of	G. R. Percy	46,585
Gold, Preparing, for dental purposes	E. G. Kearring	51,459
Gold, silver, &c., Ores of, Disintegrating	A. K. Johnston	48,284
Gold-beating machine	M. Hastings	48,394
Gold and silver, Amalgamating	J. N. Wyckoff	50,296
Gold and other precious metals from their ores, Extracting	H. Wurtz	48,499
Governors	D. A. Clary	46,778
Governors	T. S. LaFrance	47,648
Governors	W. F. Keeler	47,109
Governors, Engine, Steam	T. J. Lovegrove	48,344
Governors, Engine, Steam	J. H. Wait	51,767
Governors, Engine, Steam	T. R. Pickering	50,624
Governors, Engine, Steam	A. Brown	50,793
Governor valves	O. L. Brown	48,652
Governor valves	C. W. LeCount	49,422
Governor valves	R. W. Gardner and J. Robertson	51,037

Invention or Discovery.	Name of Patentee.	No.
Governors for water-wheel gates	J. H. Wooster	46, 430
Grading scrapers	C. Evans and W. C. Bartlett	47, 531
Grain, Binding	A. Goodyear	50, 814
Grain, Grinding mills for	J. Brown	51, 549
Grain, Hulling	C. O. Bullot	49, 205
Grain, Hulling and cleaning	J. M. Mayer	46, 374
Grain, Indian corn and other, Sirup and sugar from	F. W. Goessling	49, 749
Grain, Indian corn or other, Sugar from	F. W. Goessling	49, 750
Grain, Indian corn or other, Sirup from	F. W. Goessling	49, 751
Grain, Levelling, in vessels' hold	G. Milsom, H. Spendelow, and G. V. Watson.	47, 030
Grain, Mashing, boiling, and fermenting	E. F. Prentiss and R. A. Robertson	49, 151
Grain, Measured, Tallying machines for	S. Hudson	45, 829
Grain, Preparing, for distillation	J. Chilcott	47, 394
Grain, Treating, for manufacture of alcohol	W. M. Watson	51, 369
Grain, Weighing	E. Sampson	50, 540
Grain, Weighing	E. F. Dunaway	51, 438
Grain bands, Securing	J. Nelson	47, 603
Grain binders	S. J. Wallace	45, 885
Grain binders	W. P. Barker	46, 869
Grain binders	J. F. Hemperly and C. Barns	49, 756
Grain binders	S. D. Locke	51, 599
Grain binders	S. D. Locke	51, 600
Grain binders	W. W. Burson	48, 900
Grain conveyers	D. W. Bryant	46, 876
Grain dryer	L. S. Chichester	47, 596
Grain dryer	S. Marsh	48, 573
Grain dryer	R. Heneage	49, 626
Grain dryer	L. S. Chichester	49, 470
Grain dryer	H. H. Beach	50, 789
Grain dryer	A. T. Boon and C. L. Stevens	50, 792
Grain dryer	J. H. Pattee and E. S. Cleveland	51, 348
Grain dryer and coffee roaster	G. B. Jones	46, 301
Grain elevators	F. Taggart, L. S. Chichester, and C. W. Mills.	48, 495
Grain huller	J. H. Thompson	48, 326
Grain hulling machine	S. Gardner and A. B. Howe	51, 445
Grain rakes	E. G. Warner	48, 606
Grain register	J. T. Wiley	49, 817
Grain screen	H. Ogborn	45, 740
Grain screen	C. T. & J. B. Messinger	49, 429
Grain separator	B. F. Trimmer	45, 772
Grain separator	H. N. Goodrich	45, 993
Grain separator	E. Young	46, 044
Grain separator	B. F. Trimmer	47, 346
Grain separator	J. H. Hamaker	47, 417
Grain separator	Joseph and James Montgomery and E. Davis.	47, 772
Grain separator	S. K. Ayres	48, 233
Grain separator	J. Tomlinson	48, 603
Grain separator	H. A. Barnard	48, 890
Grain separator	T. Harrison and W. C. Buchanan	49, 876
Grain separator	J. Davis	50, 913
Grain separator	A. J. Vandegrift	51, 495
Grain separators, Hopper for	F. H. Shroeder	46, 947
Grain separator and fanning mill	H. Ogborn	45, 796
Grain shovels	E. P. Williams	49, 330
Grain weighers, Automatic	M. Robbins	47, 247
Grain for distillation, Preparing	J. Fleischman	45, 793
Grain and grass seed separator	J. B. Wallace	48, 329
Granaries and fruit houses	S. R. Beckworth	50, 790
Granaries and other buildings, Cooling and ventilating	D. E. Somes	46, 950
Granary	B. M. Nyce	50, 267
Graining, printing, &c., Flexible forms for	H. Tubesing	46, 736
Graining instrument	W. Russell	47, 339
Graining wood	R. A. Adams	51, 774
Grape box	O. Mallory	48, 192
Grape-vine supports	F. B. Green	47, 415
Grappling apparatus	S. Riggs	49, 790
Grass, hair, &c., Cloth, the weft of which is made of	J. Downie	51, 436
Grass, hemp, flax, jute, &c., Treating	S. M. Allen	48, 782
Grasshoppers, Composition for exterminating	S. Green	49, 258
Grates	L. G. Marshall	45, 948
Grates	R. Kelly	46, 112
Grates	P. Murray	51, 472
Grates	W. J. Towne	48, 000
Grates	J. Miller	48, 425
Grates, Fire	J. Habermehl	47, 947
Grates, Furnace	E. Langen	50, 996
Grates, Furnace, Steam	E. H. Jones	48, 286
Grate, Revolving	P. J. Boris	48, 895
Grates, Stove	G. Vanderheyden	45, 881
Grates, Stove	G. W. Walker	45, 883
Grates, Stove	J. Glass	48, 344
Grates, Stove	R. Moss	50, 613

Invention or Discovery.	Name of Patentee.	No.
Grate bars	W. E. Hill	51,455
Grate bars	A. D. Puffer	46,939
Grate bar supporter	W. F. Morgan and F. C. Bartlett	50,023
Grate bars for boilers	E. Thayer	47,052
Grate bars for furnaces, Casting	J. A. Miller	45,121
Grate bars for steam generators	E. G. Blakeslee and A. Mansel	50,327
Grates for cooking stoves	J. B. Clark	48,773
Grates for cooking stoves	D. P. Foster	48,923
Grates for furnaces	W. H. Short	45,760
Grates for spices and fruits	H. L. Shephardson	49,836
Grates for steam boiler furnaces	G. L. Smith	48,455
Grates for stoves	W. McIlvain	50,258
Grater, Nutmeg	J. Lofvendahl	48,237
Gravitating and pressure machines	A. Monson	50,151
Grease cups	G. Hagenmeyer	49,259
Grenades, Hand, Igniting	J. S. Adams	45,806
Gridiron, Sheet metal	G. Booth	49,581
Gridiron attachment, Movable fireplace with	J. W. Westmore	47,176
Grinders, Percussion	A. P. Stevens	46,597
Grinder and polisher, Knife	G. L. Witsill	48,755
Grinding apples	R. Butterworth	49,714
Grinding faucets and valves	T. Shaw	48,216
Grinding knives	W. Fosket	51,779
Grinding machine, Saw	J. G. Baker	46,483
Grinding paper pulp	J. F. Jones	47,425
Grinding and cutting fodder	I. Fulton	49,396
Grinding and polishing machine, Stone	J. Harsha	48,062
Grinding and polishing metals	J. Dodge	47,527
Grinding and polishing saws	W. J. Lippincott	50,606
Grindstones	J. F. Shillaber	49,928
Grindstone, Packing	F. M. Stearns	48,319
Ground, Marking, for planting	G. M. Johnson	51,725
Guard, Lock and key	C. Leavitt	46,914
Guard, Safety, for the hammer of fire-arms	H. E. Gibbon	46,100
Guard, Safety, for protecting pottery ware	B. Jackson	46,109
Guard finger for reaping machine	A. Winterburn	48,473
Guard, Braiding, for sewing machines	L. Planter	47,171
Guide, Hemming	W. Gaskill	47,629
Guide, Hemming	W. Gaskill and G. H. Knight	47,630
Guide, Thread, for spinning machines	E. D. Hurst	45,718
Guide to key holes	W. R. Pomeroy	49,000
Guide for piston rods	E. Dunscomb	47,283
Guitar banjo	L. Brown	50,444
Gum, Softening of, Adhesive labels	B. Wilder	46,514
Gun, Caseable of, Finishing	E. Kaylor	50,139
Gun, Operating, in turrets	J. B. Eads	46,222
Gun, Spring, Toy	A. Hall	47,815
Gun, Steam, for driving stock from railroad tracks	F. G. Smith	51,229
Gun, Submarine steam	W. W. W. Wood and J. L. Lay	48,862
Gun barrels, Constructing	E. Allen	48,249
Gun barrels, Rolling	J. Yates	50,869
Gun barrels, &c., from Bessemer steel	J. Thompson	51,281
Gun cotton	J. J. Revy	50,082
Gun cotton	J. J. Revy	50,083
Gun cotton and lint	J. P. McLean	47,316
Gun locks	E. T. Starr	51,629
Gun scraper	E. L. Pratt	46,140
Gun spring	J. E. Blythe	45,789
Gun wipers	H. Berdan	49,848
Guns and gun turrets, Operating	J. B. Eads	46,223
Gunpowder, Drying and glazing	W. L. Bates and C. S. Smith	46,275
Gunpowder, Keeping	J. Gale, jr	50,313
Gunpowder, Pressing	L. Du Pont	50,104
Gunpowder, Pressing, Press for	L. Du Pont	50,568
Gutters, Cleaning, and scraping roads	N. Potter	48,591

H.

Hair, Brushing, Barber's apparatus for	C. P. Kroll	49,893
Hair restorative	R. W. Carr	50,901
Hair restorative	M. Howard	51,319
Hair and wool from animals, Clipping	C. W. Emery	46,226
Hair or wool from animals, Clipping	C. W. Emery	45,821
Halters	H. B. Ware	49,939
Halter, Neck rope	K. Gibbs	51,582
Halter clasp	J. H. Plumstead	48,307
Hame, Harness	J. E. Brown	51,256
Hame fastener	J. B. Woolsey	47,762
Hame fastener	A. J. Preston	50,842
Hame fastening	W. W. Kittleman	47,735
Hame and horse collar	M. Killacky	46,606
Hammer	J. H. Littlefield	49,898
Hammer	C. Monson	50,262
Hammer, Atmospheric	W. D. Grimshaw	45,896

Invention or Discovery.	Name of Patentee.	No.
Hammer, Atmospheric	H. Shattuck	49,592
Hammer, Carpenter's	J. O. Montignani	46,574
Hammer, Dental	J. C. Dean	48,708
Hammer, Drop	J. Evans	47,405
Hammer, Steam, Valve gear for	C. W. Willard	49,462
Hammer, Steam, Valve gear of	J. Watt	50,407
Hammer, Trip	H. C. Fessel and F. Krautwadel	46,229
Hammer, Trip	T. J. Root	46,267
Hands, Artificial	O. Lindsay and I. Vance	50,014
Hands, Artificial substitutes for	J. Reichenbach	48,440
Hands and arms, Artificial	T. Uren	46,159
Hands and arms, Artificial	T. Uren	46,158
Handles, Horn, Attaching to knives, &c	M. Bradley	49,222
Handle attachment to small-arms	E. Charlesworth	50,312
Handles to whitewash brushes	W. W. Burtnett and J. P. McIntosh	50,449
Handles for lamp chimneys	M. W. Brown	46,212
Handle for tea and coffee pots	G. B. Halsted	48,061
Harmoniums	J. Gilmour	48,881
Harmoniums or cabinet organs	T. Atkins	47,081
Harness	E. E. Hardy	47,949
Harness	J. Calkins	48,790
Harness	F. D. Ladenberger	51,062
Harness, Fastening for	J. Shepard	47,500
Harness, Loom, Wire heddles for	M. Finkle	49,251
Harness saddles	O. B. North	47,244
Harness saddles	P. Bottyer	47,276
Harness saddletrees	S. E. Tompkins	45,880
Harness saddletrees	O. B. North	46,489
Harness saddletree	A. Koehler	47,647
Harness snap	H. Harris	46,468
Harness snap	H. Harris	46,796
Harrows	M. Easterbrook	49,867
Harrows	C. Jillson	50,478
Harrow, Adjustable	H. Pulse	51,750
Harrows, rotary	J. D. Parrot	50,729
Harrow and cultivator	T. Short	46,274
Harrow and cultivator, Combined	E. D. and O. B. Reynolds	46,025
Harrow and roller, Combined	W. H. Converse	47,090
Harrow and roller, Combined	W. R. Mears	50,259
Harrow and seeder	D. L. and J. M. Barlow	45,903
Harvester	J. W. Bope	45,810
Harvester	D. D. Gitt	45,823
Harvester	J. W. Bope	45,905
Harvesters	J. W. Bope	45,906
Harvesters	A. Wood	46,170
Harvesters	W. F. Cochrane	46,178
Harvesters	W. F. Cochrane	46,179
Harvesters	W. F. Cochrane	46,180
Harvesters	W. F. Cochrane	46,180
Harvesters	W. F. Cochrane	46,181
Harvesters	W. F. Cochrane	46,182
Haevesters	W. F. Cochrane	46,183
Harvesters	S. Johnson	46,190
Harvesters	C. W. and W. W. Marsh	46,373
Harvesters	W. Needham and J. Nelson	46,486
Harvesters	F. Nishwitz	46,488
Harvesters	J. Seibel	46,502
Harvesters	G. Stone and J. P. Bullock	46,830
Harvesters	A. Rank	47,128
Harvesters	B. Wieland	47,351
Harvesters	A. A. Heath	47,639
Harvesters	S. S. Bartlett	47,691
Harvesters	J. A. Dodge	47,807
Harvesters	J. A. Dodge	47,807
Harvesters	W. H. Burckhart	47,926
Harvesters	E. F. Page	48,988
Harvesters	T. Welch	49,183
Harvesters	W. Cogswell	49,607
Harvesters	W. Cogswell	49,608
Harvesters	V. W. Blanchard	50,441
Harvesters	J. S. Davis	50,693
Harvesters	G. W. Richardson	50,844
Harvesters	L. Ray and E. Grant	50,956
Harvesters	E. P. Russell	50,959
Harvesters	G. C. Fanckboner	51,163
Harvesters	A. J. Manny	51,203
Harvesters	J. W. Prentiss	51,211
Harvesters	J. F. Seiberling	51,359
Harvesters	W. N. Whiteley, jr	51,374
Harvesters	F. Bramer	51,546
Harvesters	J. L. Garver	51,579
Harvesters, Bean	N. Chappell	46,216
Harvesters, Bean	D. B. Munger	47,320
Harvester, Binding attachment to	R. D. Brown	48,363

Invention or Discovery.	Name of Patentee.	No.
Harvester, Clover	F. Decker	46,547
Harvesters, Corn	J. W. Pope	45,811
Harvesters, Corn	J. W. Smith	47,995
Harvesters, Corn	S. Lane	48,750
Harvesters, Corn	J. S. Williams	51,505
Harvester, Driving-wheel of	E. P. Russell	49,439
Harvesters, Gearing	A. Warner	50,969
Harvesters, Guard-fingers for	S. Copeland	47,702
Harvesters, Guard-fingers for	C. T. Bush	49,713
Harvesters, Guard-fingers for	A Wissler	51,380
Harvesters, Pitman connection for	D. M. Osborne	50,879
Harvesters, Pitman connection for	D. M. Osborne	50,880
Harvester, Rake for	W. J. and R. Case	49,976
Harvester, Rake for	W. F. Cochrane	50,066
Harvesters, Rake attachments to	L. M. Batty	49,964
Harvesters, Rake attachments to	W. B. Parsons	48,834
Harvesters, Rake attachments to	L. Miller	51,070
Harvesters, Rake attachments to	L. Miller	51,071
Harvesters, Rake attachments to	H. Fisher	51,111
Harvesters, Rake attachments to	R. D. Brown	51,550
Harvesters, Raking attachments to	S. N. Page	46,930
Harvesters and reel attachments to	R. Hoffheins	48,557
Harvesters, Rakes and reels for, Combined	S. Johnston	46,300
Harvesters, Reels for	E. P. Russell	47,338
Harvesting machines, Cutter bars for	G. G. Taylor	45,879
Harvesting machines	E. P. Russell	46,394
Harvesting machines	A. Belchambers	46,628
Harvesting machines	S. N. Page	46,929
Harvesting machines	J. L. Fountain	48,335
Harvesting machines	I. H. Collar	48,658
Harvesting machines	W. F. Cochrane	49,024
Harvesting machines	M. A. Wheaton	49,186
Harvesting machines	C. R. Brinkerhoff	49,497
Harvesting machines	H. Chandler	49,501
Harvesting machines	J. S. Davis	49,506
Harvesting machines	L. M. Batty	49,963
Harvesting machines	J. Werner, jr	50,191
Harvesting machines	G. Murphy	50,206
Hats	R. S. Nickerson and J. Wallace	47,974
Hats	C. L. Rahmer	48,092
Hats	D. K. Albright and L. H. De Lange	48,222
Hats	J. P. Beatty	48,357
Hats	R. Dunlap	48,384
Hats	E. Morris	48,828
Hats	W. H. Towers	49,570
Hats	J. H. Earle	50,809
Hats	D. W. Gitchell	51,172
Hats, Attaching mourning badges to	T. H. Lowerre	48,417
Hats, bonnets, &c., Fabrics for	H. Loewenberg	46,568
Hats, Brushing	C. Faure	48,235
Hats, Fabric for, Water-proof	W. E. Mahon	49,775
Hats, Felt, Printed and embossed	A. Bailey	47,269
Hats, Finishing	J. A. Roehe and J. J. Stewart	50,165
Hats, Printing	T. Byrne and T. Henry	47,516
Hats, Ventilating	W. Smith	50,285
Hats, Ventilating	D. K. Albright and L. H. De Lange	50,999
Hat bodies, Forming and napping	R. Eickemeyer	46,552
Hat bodies, Stiffening	T. Trowbridge	48,328
Hat bodies, Stretching	R. Eickemeyer	46,553
Hat frames	A. Komp	48,412
Hat frames, Skeleton, Metallic	A. Komp	47,431
Hats and bonnets, Embossing	H. E. West	49,049
Hats and bonnets, Pressing	H. E. West	49,048
Hats and bonnets, Pressing	E. Copleston	49,384
Hay, Cutting and preparing, for baling	S. Colahan	46,993
Hay, Cutting and pressing	R. Wakeman and J. L. Balance	47,883
Hay, Loading	S. R. Higgins	45,826
Hay, Loading	R. Cobb	51,294
Hay, Raking and bunching	L. Wallace	51,500
Hay, Raking and loading	W. A. Duncan	46,647
Hay, Raking and loading	J. N. Smith	46,863
Hay, Raking and loading	M. K. Lewis, J. C. Durbin, and L. P. Lewis.	49,423
Hay, stone, &c., Gathering and loading	G. W. Holley	48,175
Hay-elevating fork	W. S. Newton,	46,018
Hay elevators	S. Rogers	46,027
Hay elevator and stacker	A. W. Tooker	48,742
Hay forks, Horse	R. Reynolds and C. Young	47,982
Hay loaders	M. K. Lewis and J. C. Durbin	45,726
Hay loaders	W. Platt and A. G. Burnham	46,139
Hay racks	A. Naramor	46,017
Hay spreaders	W. C. Gifford	45,992
Hay spreaders	D. Lyman	47,437
Hay spreaders	H. Beers	47,919

Invention or Discovery.	Name of Patentee.	No.
Hay spreader and elevator, Combined	T. C. Craven	51,650
Hay spreader and horse rake, Combined	G. N. Palmer	51,473
Hay-spreading machines	C. Willard	49,021
Hay for baling, Preparing	G. H. Nye	45,853
Head, Coverings for the	T. Bracher	48,510
Head dresses, Bands for	N. Grant and G. Downs	48,677
Head dresses, Waterfall, for ladies	P. Walter	46,961
Head-rest for railroad car seats	N. Gates	48,270
Head-rest for railroad car seats	W. R. Phelps	48,586
Heat, Utilizing, from a furnace	P. Bennett	50,551
Heaters	J. Chilcott	49,504
Heaters	E. C. Robinson	49,652
Heaters	C. C. Hare	50,354
Heaters, Feed-water	R. Poole	47,499
Heaters, Feed-water	W. B. Cross	50,459
Heaters, Feed-water, for steam-boilers	W. A. Lighthall	46,252
Heaters, Fireplace	H. H. Welch	49,325
Heaters, Gas	J. H. Jones	47,426
Heaters, Gas	J. Q. Birkey	50,678
Heaters, Mercurial	T. C. Hargrave and W. King	48,276
Heaters, Sad-iron	H. W. Dopp	48,380
Heaters, Steam	L. V. Fichet	50,346
Heater, Water, Laundry	J. Keane	48,561
Heater, Water, Stove-pipe	J. Baumeister	48,253
Heater for buildings	J. A. Lawson	46,250
Heaters for liquids, Portable	W. N. Hancock	46,665
Heater for skates	O. W. Taft	51,492
Heating, cooling, and ventilating	D. E. Somes	51,236
Heating, Steam, and fire-extinguishing apparatus	C. S. Brown	46,328
Heating apparatus, Steam, Coils for	J. Trageser	49,509
Heating apparatus, Water	J. McClosky	50,422
Heating and cooking apparatus	E. Edwards	47,706
Heating and fuel-saving device	D. C. Colby	47,489
Heat-controller attachment	M. T. Hitchcock	49,029
Heat-radiating attachments for stoves or furnaces	J. B. Hyzer	48,180
Heat radiators	H. Rugee	46,500
Heat radiators	D. G. Fletcher	47,535
Heat radiators	A. Edwards	58,540
Heat radiators for stoves	W. E. Rennolds	46,941
Heat radiators for stove-pipe	N. F. Goodrich	50,069
Heat and cold, Applying, in the treatment of diseases	J. Chapman	46,535
Hedges, Trimming	W. C. Hooker	48,946
Hedge trimmer	A. Selover	49,311
Heel calks	T. Symonds	51,241
Heel-polishing machine	J. M. Thompson and S. D. Tripp	46,761
Heel-trimming machine	J. A. Sargent	47,341
Heel-shave	J. Ross	48,448
Hemming guides	W. Gaskill	47,629
Hemmers for sewing machines	H. Gœbel	47,632
Hemming guide	W. Gaskill and G. H. Knight	47,630
Hemp, flax, &c., Fibres of, Separating	J. B. Fuller and J. P. Upham	47,539
Hemp, flax, jute, grass, &c., Treating	S. M. Allen	48,782
Hemp, flax, &c., Manufacture of paper pulp, Treating	M. A. Cushing	50,419
Hemp, flax, &c., Preparing, for spinning	J. B. Fuller and J. P. Upham	47,538
Hides, Hair from, Removing	M. Bray	49,496
Hides, Hair from, Removing	S. S. Weed	49,839
Hides, Hair and lime from, Removing	S. S. Weed	49,811
Hides, liming	S. J. Miller, A. B. Barnett, and W. H. Study.	48,578
Hinges	N. Sehner	48,630
Hinges	S. R. Dummer	49,511
Hinges	J. Close and I. Buckman, jr	49,982
Hinges	H. Young and M. Stachelin	50,411
Hinges	M. Riley	50,423
Hinges	S. R. Dummer	50,566
Hinges	J. Close and I. Buckman, jr	51,426
Hinges	E. W. Gilmore	51,447
Hinges	E. N. Porter	51,476
Hinges	W. C. McGill	51,604
Hinges	S. H. Frink	51,711
Hinges	L. Upham	50,861
Hinges, Shutter	R. Lee	46,251
Hinges, Shutter	C. F. Knauer	48,075
Hinges, Shutter	S. Drum	48,264
Hinges, Shutter	D. G. Coppin	50,099
Hinges, Shutter, and fastening	W. S. Gerard	50,239
Hobby-horse	P. J. Marqua	46,258
Hod	J. Short	50,741
Hoes	A. Patterson	49,649
Hoes, Weeding	J. Naugle	48,304
Hoes, Weeding	C. Crofut	49,985
Hoes, Weeding, Adjustable	A. C. Arnold	50,436
Hog scalders, Portable	A. Clark	51,783
Hog tamer	T. G. Pelton	47,329

Invention or Discovery.	Name of Patentee.	No.
Hoisting apparatus	W. K. Marvin	46,257
Hoisting apparatus	C. R. Otis	46,580
Hoisting apparatus	G. Ambrose	47,782
Hoisting apparatus	J. A. Talpey	47,878
Hoisting apparatus	S. M. Longley	50,607
Hoisting apparatus, Steam	C. R. Otis	47,773
Hoisting apparatus, Steam	C. R. and N. P. Otis	51,076
Hoisting machine	C. Abel	45,962
Hoisting machine	S. B. Phelps and C. A. Slack	47,036
Hoisting machine	M. Willard	47,761
Hoisting machine	J. Bird	48,044
Hoisting machine	W. Miller	48,579
Hoisting machine	P. Higdon	51,719
Hoisting tackle	J. W. Norcross	51,742
Hoisting and lowering apparatus	I. J. Lancaster	48,414
Holder, Book-stand	W. W. Marston	49,639
Holder, Chalk, for billiard tables	H. M. Wall	51,499
Holder, Clutch or rope	C. A. Emery	49,990
Holder, Plate, Focusing	L. W. Burcaw	50,555
Holder, Rein and backstrap, Combined	J. Bullene	51,420
Holder, Sand-paper	J. and N. W. Redding	46,702
Holder, Self-sustaining chuck for	T. H. Worrall	48,612
Holder, Tool, Adjustable	C. P. Benoit	46,438
Holder for fruit jars	C. G. Imlay	50,301
Hoods, Ladies'	E. Hill	48,867
Hooks	W. W. Knight and J. H. Orne	49,535
Hooks, Bench, and clamp	E. P. Wood and A. E. Blood	48,498
Hooks, bending and punching	P. L. Weimer	50,757
Hooks, Breeching	J. H. Littlefield	48,415
Hooks, Breeching, for vehicles	E. Brown	48,513
Hooks, Chain	M. Colgan	47,241
Hooks, Elastic mousing for	E. E. Stone	49,316
Hooks, Fish	W. Davis and J Johnson	51,651
Hooks, Fish, Double-lever	G. Crandell	50,799
Hooks, Fish, Making	C. O. Crosby	46,644
Hooks, Pruning	L. M. Harris	46,797
Hooks, retaining and releasing	T. E. Purchase	46,385
Hooks, Snap	H. Hise	45,714
Hooks, Snap	R. A. Goodyear	46,659
Hooks, Snap	J. Bailey	47,690
Hooks, Snap	C. B. Bristol	47,764
Hooks, Snap	C. W. Saladee	48,100
Hooks, Snap	E. Hamilton	48,275
Hooks, Snap	E. A. Cooper	48,482
Hooks, Snap	C. Marsh	49,350
Hooks, Snap	C. W. Saladee	49,654
Hooks, Snap	C. W. Saladee	49,655
Hooks, Snap	H. W. Knowlton	50,720
Hooks, Snap, for whiffletrees	C. W. Saladee	51,089
Hooks, Tackle	J. W. Norcross	47,322
Hooks, Tackle	R. Frisbie	48,336
Hooks, Tobacco	A. Putnam, jr	46,940
Hook-blank, Gas-fitters'	E. P. Gleason	49,257
Hook-blank, Plumbers'	B. F. Gladding	49,343
Hooks and eyes	J. P. Culver	45,979
Hoop, Metallic, for barrels, casks, &c	W. Wilson	48,497
Hoops, Riving	G. J. Bentley	46,439
Hoops on casks, Driving	H. C. Sherman	48,843
Hoops on casks or barrels, Driving	J. A. Loomis	49,425
Hoop cutting or bending	J. Dobbins	48,535
Hoop locks for cotton bales	E. V. Fassmann	47,288
Hoop strainer, Bale	E. A. Field	50,925
Hops, Condensed extract of, Obtaining the	S. R. Percy and W. S. Wells	46,973
Hoppers, Feed regulating mechanism for	J. S. Bodge	48,646
Hoppers for grain separators	F. H. Shroeder	46,947
Hop vines, Roots of, Preserving, by charring the stems	S. Cummings	49,238
Horse, Rocking	L. C. Percival	50,078
Horse, Spring	H. F. Metzler	46,529
Horse, Spurring and driving	J. Davis	50,803
Horse, Velocipede, trotting or pacing	H. A. Reynolds	46,705
Horse-collar fastener	A. Steinbach	48,735
Horse fastener	F. Vogeli	48,225
Horse leg-fender	S. Rossman	48,097
Horse powers and derricks	D. Woodbury	45,890
Horseshoes	W. Disbrow	46,087
Horseshoes	O. P. Macgill	47,242
Horseshoes	W. Coes	47,397
Horseshoes	A. Tyrel	47,502
Horseshoes	L. M. Guiteau	47,635
Horseshoes	G. Custer	48,618
Horseshoes	J. W. Hodges	48,623
Horseshoes	S. A. Moore	48,827
Horseshoes	T. Skelton	48,845
Horseshoes	J. Haseltine	49,028

Invention or Discovery.	Name of Patentee.	No.
Horseshoes	A. Weitman	49,324
Horseshoes	A. Weitman	49,812
Horseshoes	H. H. Palmer	51,078
Horseshoes	J. McPherson	51,738
Horseshoe calks	J. L. Pike	46,262
Horseshoe calks	C. H. Johnson	47,360
Horseshoe calks	I. R. Potter	50,952
Horseshoe and calks	C. H. Johnson	47,495
Horseshoes, Calks and toes for, Movable	S. Lloyd	46,192
Horseshoes, Making	A. J. Roberts	47,071
Horseshoes, Punching	S. D. Turner	49,838
Horseshoe machine	L. H. Bigelow	50,440
Horseshoe nail machine	H. F. Sehnders	49,657
Hot-blast apparatus	R. Denholm	49,862
Houses, Fruit-drying	J. Billings	50,414
Houses, Fruit, and granaries	S. R. Beckwith	50,790
Houses, Portable, Frames for	J. Morgan	45,734
Houses, Smoke	W. Hamilton	47,355
Houses for preserving fruit, &c	E. F. Olds	48,833
House or refrigerator for preserving animal and vegetable substances.	J. H. Fisher	49,098
Household and culinary operations, Facilitating	H. S. Shepardson	50,779
Hubs, Boring	P. Schuttler	47,576
Hubs, holding while bored	P. Schuttler	46,501
Hubs, Wheel, Carriage	M. Young	51,773
Hydraulic apparatus	A. Desgoffe and A. Ollivier	46,315
Hydraulic pressure, Drawing bolts by	S. Wilmarth	45,785
Hydrants	W. Bailey	48,504
Hydrants	A. Stephenson	49,801
Hydrants	R. D. Patterson	50,155
Hydrocarbons, Burning	W. Sin and A. Barff	49,357
Hydrometers	H. Petrie	48,203
Hydrometers	R. Boeklen and W. Stachlen	49,221
Hydrometric apparatus	L. Braeur	50,092
Hydrometers	W. Edson	48,620

I.

Ice, Cutting and shaving	S. E. Blake	46,331
Ice, Levelling and smoothing	W. Wharton, jr	47,237
Ice, Manufacture of	C. M. Keller and T. Henderson	49,887
Ice scraper	H. W. Harkness	48,173
Ice creeper	T. Symonds	50,512
Ice creeper	D. Green	50,353
Ice crusher	W. W. Armington	50,198
Illuminating public clocks	T. I. Bailey	51,411
Incendiary compound	H. W. Libbey	48,187
Inclinometers	A. Chase	49,675
India rubber, Curing	J. B. Forsyth	51,036
India-rubber fabrics, Binding for	C. A. Ensign	51,161
India-rubber packing former	W. Webster	47,477
Indicators, Low-water	J. W. Bishop	47,183
Indicators, Low-water, for steam boilers	G. A. Riedel	47,365
Indicators, Time, for railroad trains	J. C. S. Fitzpatrick	46,787
Indicators, Steam-pressure	W. M. Davis and C. T. Webber	47,166
Injectors, Air	J. A. Bassett and O. C. Smith	48,011
Injector, Gifford	W. Sellers	49,445
Injectors, Liquid, Gaseous	C. Schultz and T. Warker	50,500
Ink, Printers'	G. Duryee	48,385
Ink, Printing	A. A. Hulot	47,909
Ink, Red	T. J. Lummus	46,684
Inkstand	F. L. Hicks	45,794
Inkstand	S. Darling	49,093
Inkstand	J. Axtman	49,211
Inkstand	B. S. Fletcher	49,617
Inkstand, Fountain, Operating parts of	W. A. Wheeler	47,060
Inkwells	F. C. Brownell	47,616
Insects, Preventing them from injuring fruit trees, &c	C. Fisher	49,869
Insignia, Military, Woven into cloth	A. M. Dorman	49,339
Instruments for curing piles	J. P. Gilbert	47,540
Insulators for telegraphs	S. F. Van Choate	47,141
Insulators for telegraph wires	L. A. Cauvet	48,906
Insulators for telegraph wires	H. H. Ward	49,482
Invalids, Table and apparatus for	S. Ustick	49,807
Iron, Curling	H. D. Jennings	48,626
Iron, Curling	H. Christian	50,095
Iron, Hardening	T. H. Jenkins	51,723
Iron, Manufacture of	A. H. Everett	48,483
Iron, Manufacture of	J. D. Williams	49,331
Iron, Manufacture of	J. D. Williams	51,771
Iron, Manufacture of, and composition	A. H. Everett	47,198
Iron, Puddling	J. Griffiths	48,485
Iron, Sheet	D. L. Pratt	46,384
Iron, Sheet	J. and T. Grey	50,203

Invention or Discovery.	Name of Patentee.	No.
Iron, Sheet, Annealing and polishing	J. W. Ells	48,918
Iron, Sheet, Cleansing	E. A. Harvey	47,103
Iron, Smelting	F. Lang and C. A. Frey	51,531
Iron, Smoothing	J. W. Currier	48,526
Iron, Soldering, Heating, Blow-pipe or gas-heater for	E. A. Leland	46,527
Iron, Wrought	R. Thomas and G. Edwards	49,175
Iron, Wrought, from the ore, Manufacture of	H. Boardman	48,478
Iron, Upsetting, cutting, and punching	J. J. Rose	49,158
Iron railings for fences	S. Crowell	47,801
Iron and steel	H. Bessemer	49,051
Iron and steel	H. Bessemer	49,052
Iron and steel	H. Bessemer	49,053
Iron and steel	H. Bessemer	49,055
Iron and steel, Bars, shafts, and other articles of	C. Sanderson	50,084
Iron and steel, Cast, Uniting with wrought or cast iron surfaces	J. D. Whelpley and J. J. Storer	50,976
Iron and steel, Malleable	H. Bessemer	51,399
Iron and steel, Malleable	H. Bessemer	51,400
Iron and steel, Malleable	H. Bessemer	51,401
Iron and steel, Manufacture of	G. Perry	47,506
Iron and steel, Manufacture of	J. Henderson	50,474
Iron and steel, Manufacture of	H. Bessemer	51,397
Iron and steel, Manufacture of	H. Bessemer	51,398
Iron and steel, Ovens for converting	W. A. Sweet	45,878
Iron and steel, Plating	E. Savage	51,754
Iron and steel from the ore, Manufacture of	C. H. Dupuy	46,549
Iron for strap points	W. D. Rinehart	49,683
Irregular forms, Rolling	J. Dodge	48,915
Ivory, Artificial	C. F. Dupper	51,109
Ivory, Cutting	C. B. Rogers	47,572
Ivory, cutting rings for	C. H. Bassett	49,191
J.		
Jacks, Boot	J. Wheeler	48,122
Jacks, Carriage	A. W. Field	47,408
Jacks, Carriage	R. Fink	47,628
Jacks, Carriage	G. L. Cummings	49,090
Jacks, Carriage	A. Higley	50,707
Jacks, Hydraulic	R. Dudgeon	49,097
Jack, Lever	W. H. Hartman	49,999
Jacks, Lifting	W. M. K. Thornton	46,599
Jacks, Lifting	H. S. Shepardson	50,306
Jacks, Lifting	A. Woodworth	50,381
Jacks, Lifting	J. Locke	51,734
Jacks, Pegging	W. R. Landfear	51,262
Jack, Spinning	H. L. Moulton	50,024
Jacks, Spinning	A. and G. Simpson	50,044
Jacks, Spinning	E. Devos	50,230
Jacks, Swing, for railway cars	J. H. Clark	51,696
Jacks and mules for spinning yarns	J. Goulding	47,547
Jacks for holding shoes	J. Ross	48,447
Jacks for pegging boots, &c	A. W. Moore	46,484
Jacks for shaft coupling	A. J. Settle	48,984
Japaning	G. W. Hubbell	47,826
Jars, Fruit	J. J. Squire	46,720
Jars, Fruit	C. G. Imlay	47,834
Jars, Fruit	R. Hemingray	48,399
Jars, Fruit	W. T. Gillinder and E. Bennett	49,256
Jars, Fruit	P. Pallissard	50,027
Jars, Fruit	A. Sherwood	50,172
Jars, Fruit	J. J. Squire	50,181
Jars, Fruit, Covers for	T. G. Otterson	51,613
Jars, Fruit, Holder for	C. G. Imlay	50,301
Jars, Fruit, Stopper for	C. R. Doane	50,806
Jars, Fruit, Stopper for	W. Chrysler	51,020
Jars, Preserve	T. Earle	46,887
Jars, Preserve, Stand for	K. E. Ashley	50,674
Jars for oil tools	R. H. Lockey	47,961
Jars and cans, Lifting	J. E. Higby	50,476
Jewel case	G. F. Kolb	47,430
Jewelry, plate, &c., Ornamenting	O. L. Parmenter	47,853
Journal box	M. J. Rice and W. H. Miller	46,823
Journal box	H. A. Lee	49,124
Journal box	W. H. Doane	49,584
Journal box	M. J. Rice and W. H. Miller	49,591
Journal box	J. T. Bruen	50,445
Journal box	T. Hill	50,477
Journal box	L. B. Higgins	51,654
Journal box, Lining	P. S. Devlan	51,700
Journal box, Lining	P. S. Devlan	51,701
Journal box, Lining	P. S. Devlan	51,702
Journal box, Lining, Composition for	P. S. Devlan	49,509
Journal box, Lubricating	J. F. Light	50,143
Journal box, Lubricating, Compound for	H. Colby	49,983

Invention or Discovery.	Name of Patentee.	No.
Journal box, Railroad	A. B. Nimbs	50,771
Journal box, Railway	R. C. Wright	49,022
Journal box, Railway	R. C. Wright	50,982
Journal box for land carriages	E. P. Palmer	50,948
Journals, Lubricating	W. Van Anden	50,520
Journals, Lubricating	C. Andrew	50,786
Jute, flax, hemp, grass, &c., Treating	S. M. Allen	48,782
K.		
Keel for ships and other navigable vessels	J. B. Tarr	47,879
Kettle, Tea	A. Kipp	48,411
Kettle for evaporating sorghum sirup, &c	E. Woodruff	50,295
Keys, Lock, Fastening	J. R. Tempest	48,602
Keys, Watch	G. H. Fuller	47,811
Key-hole, Guide for	W. R. Pomeroy	49,000
Keybolt connection of car trucks	J. J. Sherman	49,163
Key fasteners	H. Hungerford	46,239
Key guard for locks	J. M. Rix	51,621
Key seats, Cutting	J. C. Morgan	46,758
Key for locks	E. Reynolds	46,704
Key in locks, Fastening	J. H. Desalusse	49,338
Kiln, Brick, Circular	F. E. Hoffman	48,244
Kiln, Desiccating	W. J. Rand	48,492
Kilns, Malt	J. Geeman	51,169
Kiln for burning brick and pottery ware	J. N. Stanley	47,665
Knapsack	J. Weber	46,195
Knapsack	A. Perrin	48,246
Knapsack sling	J. T. Warren	46,410
Knapsack supporter	A. Dickey	46,886
Knife, Dirk	A. Heninger	48,685
Knife, Grinding	W. Fosket	51,779
Knife, fork, and spoon-holder	G. L. Morse and L. M. Herrick	46,692
Knife, Fruit, and nut-pick	G. Mayland	48,194
Knife, Handles of, Buttons, and other purposes, Material for manufacturing.	L. E. Chittenden	45,977
Knife, &c., Horn handles to, Attaching	M. Bradley	49,222
Knife, Pocket, and pistol, Combined	A. J. Peavey	49,784
Knife, Pruning	T. S. and P. W. T. Vaughan	51,497
Knife, Sharpening, paring apples, pressing beefsteak	A. F. Alexander	50,671
Knife, Table	J. O. Ely	49,246
Knife, tweezer, and ear-spoon, Combined	B. C. English	50,106
Knife blade holder	S. A. Cummings	51,297
Knife cleaner	W. T. Kosinski	49,892
Knife handle, Paper	E. Kelsey	48,953
Knife polisher	J. Palmer	48,305
Knife polishers	J. W. Battelle	51,542
Knife polisher and grinder	G. L. Witsill	48,755
Knife sharpener	D. Porter	50,951
Knife and cane stripper, Combined	J. Leffel	51,326
Knife and fork, Combined	T. B. Thorpe	46,832
Knife for opening tin cans	C. A. Ruff	46,709
Knife for removing green corn from the cob	J. Winslow	51,379
Knitting machine	J. Whittle	47,239
Knitting machine	A. C. Carey	47,354
Knitting machines	E. E. Kilbourne	47,829
Knitting machines	A. Sessions	49,835
Knitting machines	W. W. Clay	49,980
Knitting machines	I. W. Lamb	50,369
Knitting machines	J. Pepper	51,618
Knitting machines	S. Wallace	51,666
Knitting machine, Circular	T. Hawthorne	46,848
Knitting machines, Circular	C. Shirtcliff	47,579
Knitting machines, Circular, Stop motion for	P. W. Hart	46,186
Knitting machine, Setting up work in	I. W. Lamb	49,895
Knitting machines, Stop motion for	M. Lee	50,012
Knitting machine bars	J. Clute	47,620
Knitting machine needles	A. C. Carey	47,488
Knitting machine needles	L. W. Fifield	51,577
Knobs, Curtain	C. Z. Kroh	49,634
Knobs, Door, Securing neck to	T. Kennedy	45,836
Kaolin, &c., Purifying	T. Moore	50,077
L.		
Labels, Adhesive, Softening the gum of	B. Wilder	46,514
Labels, Sheep	C. H. Dana	48,055
Labels, Sheep	C. H. Dana	49,609
Ladder, Extension	T. O. Wood	46,042
Ladder, Extension	C. Easton	46,648
Ladder, Extension	W. Morehead	46,812
Ladder, Extension	J. L. Ripley	48,210
Ladder, Fruit	A. W. Olds	46,694
Ladder, Fruit	D. McMaster	51,205

Invention or Discovery.	Name of Patentee.	No.
Ladder, Fruit or step	W. E. Bond	50,894
Ladder, Orchard	C. Hayes	46,105
Ladder, Step	J. Burnett	50,091
Ladder, Step	A. F. Saunders	51,394
Lamps	H. C. Hutchinson	45,719
Lamps	J. Adair	45,805
Lamps	E. Marsh	46,053
Lamps	G. A. Tremeschine	46,059
Lamps	J. Ives	46,471
Lamps	W. W. Batchelder	46,538
Lamps	D. Symonds	46,730
Lamps	J. M. Perkins and M. H. House	46,819
Lamps	O. Hicks	47,493
Lamps	H. W. Hayden	47,680
Lamps	E. M. Lang and J. Gilman	47,681
Lamps	M. L. Callender	48,128
Lamps	C. Boschan, J. Bindtner, and W. Caffon.	48,635
Lamps	J. Ives	48,816
Lamps	L. J. Atwood	49,064
Lamps	J. P. Driver	49,613
Lamps	E. H. Green	49,752
Lamps	W. Lassel	49,769
Lamps	M. H. Collins	49,984
Lamps	C. F. Martin	50,019
Lamps, Coal oil and gas stove	J. E. Ambrose	46,045
Lamps, Floor	J. L. Bryant	49,852
Lamps, Furnace, Hot blast	J. H. Wilhelm	50,865
Lamps, Hanger for	T. S. Hudson	46,236
Lamps, Hydrogen	C. Hagen and F. Aurnhammer	47,012
Lamps, Keeping oil cool in	J. Allen	50,087
Lamps, Locomotive head	P. Budenback	51,135
Lamps, Miners'	W. McClave	49,477
Lamps, Oil, Coal	A. H. Platt	47,451
Lamps, Oil, Coal, Hand	E. Roberts	49,924
Lamps, Oil, Coal, for cooking purposes	W. B. Billings	50,892
Lamps, Raising and lowering	T. G. Crosby	48,334
Lamps, Shade holder for	C. St. John	46,534
Lamps, Shade holders for	L. J. Atwood	47,913
Lamps, Street	J. Stratton	48,461
Lamps, Street, lanterns, &c	J. Binney	46,631
Lamps, Vapor	J. J. Riddle	46,266
Lamps, Wind guard and air-heater for	J. B. Copwell	50,560
Lampblack	A. Prenatt	50,493
Lamp cleaner	R. White	50,310
Lamp cone	C. H. Buckalew	47,087
Lamp post, Gas, Street	J. T. P. Hunt	45,717
Lamp shade	A. M. Mills	47,638
Lamp shade holders	J. Hanley	47,418
Lamp stand and clothes dryer, Combined	J. Donaldson	49,244
Lamp wicks, Trimming	H. F. Bond	45,692
Lamps for burning oil	T. S. Speakman	47,173
Lamps for heating curling irons, &c	D. T. Burrell	46,775
Lamp and stove, Combined	C. B. Guy	48,678
Lance, Bomb, for killing whales	S. Barker	46,437
Lands, Marsh and swamp, Reclaiming	L. B. Driggs	48,382
Lanterns	G. C. Merrill	46,010
Lanterns	C. Engelskirken	46,227
Lanterns	J. J. Leffingwell	47,212
Lanterns	J. S. and T. B. Atterbury	47,267
Lanterns	W. Westlake	47,478
Lanterns	J. H. Irwin	47,551
Lanterns	J. Ives	49,274
Lanterns	V. H. Miltimore	49,290
Lanterns	J. King	49,417
Lanterns	A. Tufts	49,665
Lanterns	S. Roebuck	49,953
Lanterns	W. Westlake	50,538
Lanterns	W. Westlake	50,192
Lanterns	W. Westlake	51,526
Lanterns	R. Dunham	50,567
Lanterns	J. H. Irwin	50,591
Lanterns	R. M. Merrill	50,725
Lanterns	L. F. Betts	51,005
Lanterns, Globe	J. S. and T. B. Atterbury	47,268
Lanterns, Pocket	J. A. Minor	46,011
Lanterns, Portable	C. Deavs	46,184
Lanterns, Portable	H. S. Kassebaum	47,733
Lanterns, Stone	D. L. Jacques	46,802
Lantern frames	R. S. Laird	46,114
Lantern guides	T. Brown, jr., and J. L. Lowry	50,653
Lanterns and street lamps	J. Binney	46,631
Lap shaver and leather splitter	J. Harvey and T. Herkstroeter	47,300
Lard, Refining	G. C. Napheys	51,075

Invention or Discovery.	Name of Patentee.	No.
Lard, &c., Rendering	T. Hopkins	45,960
Lard, Stirring and cooling	A. R. Judson	47,361
Lard, tallow, and grease, from the refuse of rendering tanks, Separating.	P. Andrew	46,204
Lard, tallow, &c., Rendering	C. E. Gray	46,103
Last	P. Jackson	49,275
Last	G. Marshall	50,252
Last, Boot and shoe	J. C. Plumer	45,748
Last, Darning	D. E. Holden	51,047
Last, Shoe	S. K. Abbott	46,174
Last, Shoe, Fastenings for blocks of	D. Lyneham and H. H. Koch	47,314
Lasting machines, Toe piece for	A. S. McIntire and N. S. Thompson	46,375
Latch	H. H. Elwell	43,650
Latch	E. A. Tuttle	47,758
Latch, Cupboard	B. P. Grover	49,398
Latch, Gate	J. Leonard	48,292
Latch, Gate	E. O. Frink	51,710
Latch, Knob	A. Williams	48,123
Latch, Knob	G. J. Colby	48,909
Latch, Knob	H. Richmond and A. Cloude	50,273
Latch, Reversible	E. Halley	50,931
Latch, Stands for	H. D. Stover	50,510
Latch, Spring, for window sash	W. Toshach	48,463
Latch for blinds or shutters	B. S. Huntington	50,186
Latch for doors	S. W. Fosdick and A. C. Dakin	46,653
Latch and bolt	W. J. Meyer	50,260
Laths for buildings	D. Phillips	45,936
Lathes	J. Stark	47,997
Lathe, Chuck for	S. J. Cone	48,521
Lathes, Dogs for	W. Vine	49,180
Lathe, Engine	J. L. Johnson	46,677
Lathes, Prism	A. Kelsey	51,388
Lathes, Turning	D. Slate	46,162
Lathes, Turning	N. Harper	46,352
Lathes, Wood turning	G. H. Ober	48,428
Lathes, Wood turning	H. Locke	49,035
Lathes, Wood turning	R. W. George	49,516
Lathes, Wood turning, Cutters for	J. Shannon	49,161
Lathe chuck	W. A. Reilly	47,981
Lathe chuck	S. B. Burritt	48,259
Lathe dog	C. W. Count	50,604
Lathe fastening	J. M. Stone	47,876
Lathe for turning heads of nails, tacks, &c	W. H. Nichols and H. H. Abbe	49,139
Lathes for turning tool handles	H. K. Jones	48,409
Lathes for wood turning	W. W. Carey	51,554
Laundry, Family	H. E. Smith	50,964
Lazy jack for vessels' sails	D. R. Arnold	47,178
Lead, Refining	J. J. Crook	50,800
Lead, Sheet	J. Robertson	50,036
Lead, White	W. Archer and C. Rice	46,706
Lead, White	W. Baker	48,243
Lead, White, and glucose	R. Rowland	48,099
Lead, White, Pots for the manufacture of	J. H. Chadwick	51,018
Leather, Articles of, Economizing the manufacture of	W. Adamson	46,061
Leather, Artificial	W. W. Waite	51,781
Leather, Blacking, Composition for	R. W. Keating	47,957
Leather, Boarding	W. H. Moore	48,971
Leather, Cutting	J. F. Severence	47,865
Leather, Drying and pressing	G. Harvey	49,402
Leather, Embossing	G. W. Piatt	48,876
Leather, Harness, Cutting	J. Wehr	49,459
Leather, Punching	L. H. Wood	48,474
Leather, Scouring	W. M. Clark	49,606
Leather-channelling tool	E. H. Crane	45,978
Leather drying	R. Lee	48,186
Leather splitter and lapshaver	J. Harvey and F. Herktroeter	47,300
Leather water-proof, Rendering	G. Conklin	49,826
Leather and process for manufacturing the same	G. Botters	46,443
Legs, Artificial	A. A. Marks	46,687
Legs, Artificial	R. Clement	47,281
Legs, Artificial	T. Burr	47,353
Legs, Artificial	J. W. Watson and T. B. Stanley	48,138
Legs, Artificial	J. J. Austin	48,251
Legs, Artificial	J. Condell	48,660
Legs, Artificial	J. Condell	48,792
Legs, Artificial	J. Monroe	49,038
Legs, Artificial	J. A. Foster	49,253
Legs, Artificial	J. Schneider	49,443
Legs, Artificial	G. B. Jewett	49,528
Legs, Artificial	G. B. Jewett	49,529
Legs, Artificial	A. Mennel	49,645
Legs, Artificial	J. Walker	49,936
Legs, Artificial	R. G. Lockwood	50,770

Invention or Discovery.	Name of Patentee.	No.
Legs, Artificial	G. B. Jewett	51,593
Lemon-squeezer and fruit masher	W. H. Armington	50,199
Lenses, Photographic	C. B. Boyd	50,681
Lenses, Photographic	J. Schnitzer	49,160
Lenses for spectacles	C. Buckley	51,776
Letters, packages, &c., Transmitting and delivering	A. E. Beach	49,699
Letter balance, pen-rack, and calendar, Combination of	H. N. Toft	45,770
Letter file	J. W. Hauxhurst	50,580
Letter or invoice file	R. Boeklen	50,652
Levels	G. Cuppers	51,564
Levels, Pendulum	B. F. St. John	49,802
Levels, Spirit	R. F. Burnett	49,710
Level, square, compass, and plumb-staff, Combined	J. R. Abbott	51,675
Lever, Differential	G. J. Washburn	46,838
Leverage	W. Wills	40,409
Lifts, Dead centre	J. J. Gorman	46,102
Lifting apparatus	G. B. Windship	49,945
Lights, Head, for engines	S. M. Davies	46,998
Lights, Head, for locomotives	T. S. Ray and S. E. Cleveland	51,351
Lights, Head, Locomotive	T. J. Newland	46,380
Lights, Ships' deck and side, Closing	E. B. Vannevar	48,033
Lights for vessels, Deck and side	C. Perley	48,836
Lightning conductors	I. Johnson	47,310
Lightning rods	S. J. Mitchell	47,846
Lightning rods, Joints for	L. King	49,633
Lightning-rod joints	J. B. Lyon	50,372
Lightning-rod joints	N. E. Smith	50,398
Limbs, Artificial	J. Combs	49,234
Lime, super-phosphate of	E. P. Baugh	47,610
Linchpin	G. Wright	47,674
Linchpins, Securing	C. M. Risley	49,651
Linen, cotton, &c., Printing and dyeing	A. Parof	50,885
Liniment	G. W. Smith	46,715
Liniment	B. Marsteller	47,653
Liniment	J. H. M. Morris	48,198
Link, Adjustable	T. Pfeiffer	51,661
Link, Snap	C. W. Saladee	51,088
Linseed, Triturating and heating	T. Rowe	46,945
Lint and gun cotton	J. P. McLean	47,316
Liquid, Concentrating	C. A. Wood	47,158
Liquids, Cooling	P. and F. Hinkel	48,941
Liquids, Evaporating	J. J. Johnson	50,935
Liquids, &c., Filtering	R. Stewart	46,724
Liquids, Freezing	J. Baptiste, J. Mignon, & S. H. Rouart	50,212
Liquids, Heater for, Portable	W. N. Hancock	46,665
Liquids, Inflammable, Preparing so as to prevent accidents	T. J. Barron	46,987
Liquids, Saccharine, Boiling and evaporating	D. M. Cook	48,522
Liquids, Saccharine, Evaporating	B. Brown	46,069
Liquids, Spirits and other, distilling	F. Haeck	51,403
Liquids in casks, Measuring	W. C. McCarthy	51,069
Liquors, Malt, Cooling	F. L. Wissmann	50,293
Liquors, Malt, Decolorizing	C. R. M. Well	50,523
Liquoring sugar in centrifugal machines	F. Seiberlich	49,310
Loam luting, Revivifying	J. Chilcott	50,220
Lock	H. Jackson	46,241
Lock	L. F. Munger	46,531
Lock	N. Stafford	46,721
Lock	W. B. Dodds	46,858
Lock	H. Oaks	47,325
Lock	B. M. Vanderveer	47,470
Lock	J. Sargent and H. W. Covert	47,575
Lock	C. R. Wagner	47,588
Lock	W. Hall	47,817
Lock	W. K. Marvin	47,842
Lock	H. D. Richardson	48,209
Lock	L. Yale, jr	48,475
Locks	F. Rudolph	48,980
Lock	C. T. Gibson	49,101
Locks	E. W. Brettell	49,223
Lock	L. Lillie	49,282
Lock	J. Post	49,297
Lock	J. Post	49,298
Lock	H. B. Tyler	49,481
Lock	W. C. Bussy	49,712
Lock	J. Euteneur	49,991
Lock	A. E. Deitz	51,152
Lock	L. H. Magott	51,467
Lock	R. Vollschwitz	51,498
Lock	B. M. Vanderveer	51,763
Lock, Door, Keepers for	S. B. Williams	51,639
Lock, Hoop, for baling cotton	F. Quant	51,214
Lock, Hoop, for cotton bales	E. V. Fassmann	47,288
Lock, Keys in, Fastening	J. H. Desalusse	49,339
Lock, Night, Traveller's	W. Thomas	50,751

Invention or Discovery.	Name of Patentee.	No.
Lock, Pad	D. T. Brown	47,352
Lock, Pad	A. Huffer and N. Schner	48,558
Lock, Row	J. W. Norcross	46,132
Lock, Row	W. Sage	46,589
Lock, Safe	J. Farrell	48,919
Lock, Sash	A. Ridell	51,222
Lock, Seal	H. W. Dopp	51,434
Lock, Shutter	S. S. Garver	48,925
Lock, Wagon	J. F. Yates	48,228
Lock, Window	T. G. Ford	47,537
Lock, Window	A. C. Arnold	50,321
Lock for car seat	A. Duncan and J. M. Zeigler	46,456
Lock for coats, &c	C. B. Trimble	51,524
Lock for a piano	E. L. Gaylord	49,100
Lock for a piano	A. F. Pfeiffer	49,149
Lock for a pianoforte	S. Walker	47,349
Lock for a satchel	B. Steinmetz	49,207
Lock-key guard	C. Leavitt	46,914
Lock valves for canal gates	W. J. Jerome and L. K. Cole	47,643
Lock and burglar alarm	E. Warne	49,940
Lock and key fastener	J. B. Ayer	51,410
Locket, Miniature	E. N. Foote	46,788
Locomotive	J. B. Root	51,753
Locomotive, Street, Running gear of	J. C. Story	51,098
Locomotive head lights	T. S. Ray and S. C. Cleveland	51,351
Locomotive head lights	T. J. Newland	46,380
Looking-glass, Making	L. P. Angenard	46,062
Looms	W. Breitenstein	45,969
Looms	O. B. Hubbard	46,971
Looms	W. Tunstill	47,687
Looms	J. Braun	49,369
Looms	S. C. Mendenhall	49,644
Looms	J. Welsh	49,814
Looms	R. W. Andrews	50,215
Loom, Circular	J. J. Greenough	51,040
Looms, Cloth registering attachment for	C. C. Temple	48,325
Looms, Hand	J. G. and H. T. Henderson	46,798
Looms, Hand	J. W. Hayes	49,589
Looms, Hand	J. Seamon and W. G. Henderson	50,041
Looms, Hair-cloth, Weft-feeding device for	J. Blanchard	46,442
Looms, Heddle frames for	M. Finkle	48,057
Loom, Jacquard apparatus for	L. D. Valetton	50,993
Looms, Let-off for	H. Fiske	49,472
Looms, Let-off for	W. W. Pomeroy	49,479
Looms, Let-off for	P. Phillips	50,156
Looms, Let off and take up motion for	D. Bassett	51,003
Looms, Motion, Let off	S. Estis	49,950
Looms, Picker for	B. F. Day and C. H. Nelson	50,227
Looms, Picker checks for	L. J. Labounty	49,830
Looms, Picker motion for	J. Cady	47,517
Looms, Picker-staff connection in	W. Wieland	49,182
Looms, Power, Harness motion for	C. Duckworth	49,096
Looms, Shuttles for	W. Wilder	46,040
Looms, Shuttles for	J. H. Coburn	48,154
Looms, Tape, Spooling machine for	J. Gibbs	51,038
Looms, Warp-beam of, Friction mechanism for the	O. Kenison and O. J. McClary	46,475
Loom-shuttle, Operating	D. Bickford	51,006
Looms for cross-weaving	C. Roder	50,990
Loom harness, Wire heddles for	M. Finkle	49,251
Loom for lappet weaving	W. Aspinall	50,764
Loom for weaving embroidered fabrics	J. G. Spitzli	51,095
Loom for weaving double-faced pile fabrics	P. Joyot, jr	46,433
Loom for weaving goods with elastic strands, Tension mechanism for.	L. Hull	49,271
Loom for weaving plush or piled fabrics	S. Holt	40,754
Lounge or sofa	E. Smith	50,397
Lowering and hoisting apparatus	I. J. Lancaster	48,414
Lubricant for wood	B. A. Earle	46,551
Lubricating apparatus	J. F. A. Aerts	51,276
Lubricating compound	J. Lossiel	50,015
Lubricating compound	D. C. Taylor	50,049
Lubricating compound for journal boxes	H. Colby	49,983
Lubricating machinery	P. E. Proust	46,856
Lubricating the packing of stuffing-boxes, &c	J. B. and W. H. Miller	47,170
Lubricators	J. Broughton	45,694
Lubricators	J. F. A. Aerts and P. F. Aerts	46,196
Lubricators	T. W. Goodwin	46,231
Lubricators	F. Bresson	47,367
Lubricators	L. H. Olmsted	47,561
Lubricators	T. G. Pelton and J. Brewer	49,148
Lubricators	J. H. Ferguson	50,233
Lubricators	S. E. Kleinschmidt	50,719
Lubricators	J. Broughton	51,419

Invention or Discovery.	Name of Patentee.	No.
Lubricators for steam engines	J. P. Ferris	51,106
Lubricators for steam engines	S. E. Foster	51,112
M.		
Machinery, Driving	W. S. and S. B. Wells	48,467
Machinery, Lubricating	P. E. Proust	46,856
Machinery clutch	T. F. Hammer	48,769
Magazine or self-loading fire-arms	W. Fitzgerald	45,919
Magnets, Electro, for oil-wells	M. Knickerbocker	51,729
Magnets, Helices for	L. Bradley	49,074
Magnets, Sounder	J. Clark and H. Splitdorf	49,857
Magnets for telegraphs, Receiving	J. J. Clark	46,639
Magnetic electro-regulators	F. F. A. Achard	49,842
Mails, Receiving and distributing on railroad cars	A. Jordan	50,435
Mail-bag, Receiving and delivering to and from railroad trains and stations.	A. Chavanne	49,056
Mails and packages on railroad cars, Receiving and delivering	W. J. Ketcham	48,954
Mails and packages, Delivering from railroad cars	C. D. Everett	51,162
Mallets	A. Partridge	46,972
Mallets, Croquet	L. Byrnes	51,016
Mallets, Dentists	J. A. Harris	50,468
Mallets, Dentists	J. N. Scranton and H. H. Parsons	50,633
Malt, Steeping, growing and drying	A. Kreusler	49,768
Malt liquor, Cooling	F. L. Wissmanne	50,293
Malting apparatus	M. Riley	50,958
Mangle	W. Price	45,938
Mangle	W. Radbourne	46,263
Mangle	J. Johnson	47,152
Mangle	T. Farnsworth	47,708
Manure	W. D. Hall	46,847
Manure, Spreading	J. H. Stevens	45,767
Manure, Treating	E. P. Baugh	47,611
Marble, &c., Cleansing, Composition for	W. Gumaugh	47,295
Marble, Polishing	A. M. Tomb	46,407
Marble-polishing machine	E. T. Nichols	48,832
Marble-finishing machine	H. W. Kent	50,829
Marking ground for planting	G. M. Johnson	51,725
Marl, Treating and compounding	R. B. Fitts	47,941
Mash tun	J. Chilcott	47,931
Mash tun for brewers	B. G. Martin	51,518
Mast coat	A. J. Gove	48,767
Match, Friction	S. Krackowizer	47,311
Match, Friction	S. C. More	47,848
Match, Friction	G. G. Dennis	48,913
Match, Friction	V. R. Powell	49,002
Match, Friction	V. R. Powell	49,549
Match, Friction	P. B. Tyler, W. M. Chandler, and L. F. Standish.	50,860
Match, Friction, Composition for	N. B. and D. Shaw	49,659
Match, Friction, Composition for	L. Lauszweert	50,370
Match, Friction, for lighting cigars, &c	H. Reiman	50,843
Match cards	W. G. Crane	49,727
Match-holder, Safety	H. M. Jewett	48,132
Match igniter	J. H. Merrill	49,542
Match plates, Moulders'	C. Truesdall and A. Sennett	51,366
Match safe	R. W. Jenks	49,760
Match splint cards	B. Hotchkiss	48,176
Match splints and scale-boards, Cutting	J. K. Mayo	50,833
Mattress	R. Krause	47,112
Mattress, Spring	G. W. Mitchell	46,573
Meal and flour for transportation, Preparing	E. B. Larcher	48,697
Measures, Board	G. S. Tiffany	49,011
Measures, Lumber	A. M. Olds	45,741
Measures for the human body	G. Beard	48,644
Measurement of ladies' dresses, Finding, waist and chest	M. M. Turner	46,409
Measuring garment	J. B. West	45,780
Measuring and testing spirits and other distillates	E. Payne	46,058
Meat, Cutting	W. E. Richardson	46,942
Meat, fruit, fish, &c., Preserving	J. G. Staunton	45,765
Meat chopper	A. F. Spaulding and S. N. Scott	48,734
Meat chopper	J. Massey	48,965
Meat-chopping machine	A. F. Spaulding and S. N. Scott	46,153
Meat-chopping machine	G. W. Sargent and P. H. Chesley	48,451
Meat compound	B. M. Fowler	51,259
Meat crusher	R. V. Jones	48,072
Meat pounder and potato masher	J. A. McNeil	50,724
Meat safe	E. Duncan	51,573
Mechanical movement	E. Matterson	48,294
Mechanical movement	W. McGill	49,905
Mechanical movement	J. A. Cleppenger	50,687
Mechanical movement	S. C. Matterson	50,943
Medals, pictures, buttons, &c	H. C. Griggs	45,710
Medical compound	A. P. Coryell	46,449

Invention or Discovery.	Name of Patentee.	No.
Medical compound	E. Penfield	47,035
Medical compound	L. Shultz	47,750
Medicine for the cure of erysipelas	H. A. Lamb	48,567
Medicine for horses	V. Vance	49,015
Melodeons	W. Kinnard and J. B. Dreher	47,110
Melodeons	P. J. Puetz	48,437
Melodeons, Swell of, Operating	D. Clark and T. Stephenson	46,335
Meridian-finders	W. Stackpole	50,182
Mess kit	E. Blakeslee	46,210
Metal	H. F. Mann	46,371
Metals, Amalgamating	O. G. Warren	45,944
Metals, Extending by steam heat	A. S. Sweet, jr	50,511
Metals, Grinding and polishing	J. Dodge	47,527
Metals, Hammering	J. Ramsbottom	49,058
Metals, Molten, Casting	J. De Rosthorn	45,947
Metals, Oxidizing	W. Atwood	46,618
Metals, Plated	J. D. Gruneberg	51,714
Metals, Plates of, Rolling tapering bars of	J. Holmes	48,868
Metals, Precious, Amalgamating	C. A. Seely	47,577
Metals, Punching	E. R. Hollands	46,056
Metals, Punching	D. T. Walker	49,937
Metals, Refining	J. Ramdohr	48,438
Metals, Rolling	H. Waters	45,886
Metals, Rolling	H. Waters	47,590
Metals, Separating from ores	J. D. Whelpley and J. J. Storer	48,226
Metals, Sheet, Bending	S. Pennock	46,261
Metals, Sheet, Boxes of	G. W. Bently	47,892
Metals, Sheet, Cutting	H. Low	45,841
Metals, Sheet, Cutting	H. Low	47,967
Metals, Sheet, Cutting	H. Low	50,481
Metals, Sheet, Forming tubes of	M. G. Wilder	47,888
Metal bands, Sheet, Joining	W. Painter	49,782
Metal plates, Bending	J. W. Easby	48,538
Metal ware, Sheet, Forming	M. Bray	51,421
Metallic filings, Separating	J. Johnson	46,005
Metallic plates, Engraving	W. L. Ormsby	47,745
Meters, Gas, Dry, Packing the shafts of	N. Tufts, jr	49,935
Meters, Water	J. B. Benton	46,990
Meters, Water	J. Sheffield	47,866
Meters, Water	G. F. Blake	47,893
Meters, Water	H. Isham	51,056
Meters, Water	G. F. Blake	51,415
Meters, Water	H. H. Walcott	50,307
Meters and hydraulic engines	J. S. Barden	50,651
Microscope	W. Wale	46,511
Milk, Condensed, and uncrystallized sugar, Compound of	G. R. Persy	46,022
Milk, Condensing	J. R. Pond	50,950
Milk, Condensing	J. R. Pond	51,749
Milk, Preserving and transporting, Car for	M. M. Clark	46,640
Milk, Testing	C. S. Brown	48,256
Milk stand	Z. Saunders	50,736
Milkers, Cow	L. O. Colvin	46,994
Mills, Bark	N. Spencer	49,319
Mills, Bolting	E. H. Vetteco	45,802
Mills, Bone	E. P. Baugh	46,627
Mills, Cane	O. E. Woodbury	50,978
Mills, Cider	W. and L. Clayton	48,657
Mills, Cider	J. A. Crever and F. H. Kerney	49,088
Mills, Cider	W. M. McDowell and C. E. Baechtel	49,641
Mills, Cider	C. Pool and M. Eddy	50,158
Mills, Cider	J. H. Thomas and P. P. Mast	51,101
Mills, Fanning	B. C. White	46,039
Mills, Fanning	H. W. Veregge	46,312
Mills, Fanning	A. Fanckbouer	47,533
Mills, Fanning	G. Leach	47,839
Mills, Flouring	S. Godfrey	50,466
Mills, Fanning, and grain separators	H. Ogborn	45,796
Mills, Grinding	J. C. Roberts	50,274
Mills, Grinding	C. T. Weston	50,646
Mills, Grinding	R. Denison and J. B. Moon	50,805
Mills, Grinding	E. H. Cotton	51,022
Mills, Grinding	N. Shoemaker	51,227
Mills, Grinding	J. Brown	51,549
Mills, Grinding	T. B. Burtis	51,551
Mills, Grinding	J. Kemp	51,596
Mills, Grinding, Quartz	Z. Wheeler and P. M. Randall	51,637
Mills, Hominy	W. Wright	48,332
Mills, Quartz	N. Goodwin, jr	50,115
Mills, Rolling	E. Wassell	47,475
Mills, Rolling	E. Wheeler	47,886
Mills, Saw	J. H. Clemens	45,702
Mills, Saw	W. A. Wright and J. Molyneux	48,349
Mills, Saw	J. Fecker	48,804
Mills, Saw	G. H. Clemens	49,721

Invention or Discovery.	Name of Patentee.	No.
Mills, Saw	S. Perry	49,917
Mills, Saw	A. P. Conant	50,223
Mills, Saw	G. H. Clemens	50,455
Mills, Saw	E. Andrews	51,126
Mills, Saw	T. Traccy	51,244
Mills, Saw	S. F. Ames	51,282
Mills, Saw	P. Hamilton	51,310
Mills, Saw, Head blocks for	J. Hart	45,624
Mills, Stamp and Crushing	J. D. Whelpley and J. J. Storer	49,181
Mills, Sugar	P. Fitzgerol	50,570
Mills, Sugar cane	E. A. Williams	46,743
Mills, Sugar cane	J. Harris	49,998
Mills, Tanning	J. K. Buck	47,186
Mills for rolling iron and steel	D. Hall	50,704
Millstones, Dressing	A. Wing	46,963
Millstone dress	G. Natcher	48,831
Millstone dressing	W, A. Dryden and J. H. Montgomery	50,565
Millstone pick	C. R. Elmer	51,030
Milling machine	E. C. Stiles	46,401
Milling machine	J. R. Brown	46,521
Military insignia woven in cloth	A. M. Dorman	49,339
Mines, Ventilating	J. S. Fisk nnd J. Westerman	45,918
Mines, Ventilation of	J. L. Beadle	47,694
Mines, Ventilation of	H. Haupt	48,065
Mining Coal, Machine for	G. W. Grier and R. H. Boyd	50,577
Mining, Placer	C. H. Smith	47,046
Mining machines, Coal	J. H. Fisk and J. Westerman	45,917
Mining machine, Coal	E. K. and J. M. Bruce	49,972
Mining machinc, Coal	J. G. Jones	51,405
Mining and tunnelling machine	H. Haupt and J. Y. Smith	47,168
Microscope	J. J. Bausch	47,382
Mirrors	R. Keck	50,874
Mirrors, Toilet	J. Johnson	50,659
Mitering machine	G. Trimble	51,633
Molasses, Improving color of	J. Von Bohm	46,431
Monitor turrets, Raising, by hydraulic pressure	S. Wilmarth	51,378
Mop	G. W. Tolhurst	46,406
Mop	A. T. Boon and W. Spaulding	46,872
Mop	J. and H. R. Lee	47,066
Mop	M. Jincks	47,730
Mop-head	S. Cooper	47,398
Mop-head	N. Homer	47,642
Mop-head	W. W. Spaulding	49,566
Mop-head	C. Karr	50,137
Mop-head	P. R. Higley	51,514
Mop-head and broom	E. J. Green	50,352
Mortars, Hand, Mounting	W. E. Goodwin	46,101
Mortising machine	C. L. Zeidler	48,863
Mortising machine	J. Stufflebeen	51,100
Mortising plane stock	J. Richards	46,391
Mortising tool, Revolving	W. Zimmerman	48,759
Mosquito bar or tent	A. W. Price	48,308
Motion, Compensation for loss of	T. Shaw	46,369
Motion, Converting	F. Brewer	48,360
Motion, Crank, Reciprocating	B. K. Dorwart	50,695
Motion, Reciprocating into rotary, Converting	J. F. Foss	49,618
Motion, Rotary into reciprocating, Converting	P. Werm	45,779
Motion, Rotary into reciprocating, Converting	S. F. Ames	48,502
Motion, Transmitting	E. Wadham	48,780
Motion, Transmitting	H. F. Shaw	50,283
Motion of tap screw, Reversing	L. Yale, jr	48,476
Motor, Thermal	G. I. Washburn	48,607
Moulds, Brick	J. Hamer and T. Lippincott	49,105
Moulds, Brick	J. F. Schuffenecker	46,272
Moulds, Butter	O. Allen	46,319
Moulds, Crucible	T. G. French	50,812
Moulds, Facing	J. and A. Hursh	49,272
Moulds, Facing, Powder for	J. Nichols and W. Batty	46,578
Moulds, Metal, Casting grooved rolls in	R. C. Totten	50,187
Moulds, Shank of, Holding, for glass buttons	G. Matthewman	50,374
Moulds for button making	G. Matthewman	48,082
Moulds for casting, Forming	W. T. Horrobin	46,564
Moulds for casting metal safes, vaults, and similar substances	L. Lillie	51,125
Moulds for casting railroad bars	H. Jenkins	50,362
Moulds for enema syringes	F. B. Richardson	50,957
Moulders' bench	C. L. Bishop	46,209
Moulders' match plates	C. Truesdale and A. Smith	51,366
Moulders' sprues	M. R. Howell	45,716
Moulding, Enamelling	B. McEachren	50,146
Moulding cores	J. P. Davis	47,937
Moulding potters' ware	E. N. Blackmer	50,791
Moulding and frames	G. Henze	49,829
Mouth piece, Safety, Submarine	J. Hawkins	46,902
Mouth piece for cigars	J. Ball	46,986

Invention or Discovery.	Name of Patentee.	No.
Movement, Mechanical	W. C. McGill	47,315
Movement, Mechanical	W. McGill	49,905
Movement, Mechanical	J. A. Clippinger	50,687
Movement, Mechanical	S. C. Matteson	50,943
Mowing machines	J. G. Perry	46,933
Mowing machines	J. Jann	46,566
Mowing machines	S. S. Bartlett	47,692
Mowing machines	L. M. Batty	49,962
Mowing machines	H. F. Lovejoy	50,830
Mowing machines	H. L. Frailey	51,301
Mowing machines	J. B. Tinker	51,364
Mowing machines	R. W. Whitney and F. M. Hardison	51,396
Mowing machines	A. Palmer	51,746
Mowing machines, Lawn	J. A. and H. A. House	48,947
Mowing machines, Hand	G. W. Jennings	47,022
Mowing and reaping machines	T. Swan	45,798
Mowing and reaping machines	T. Holbrook	45,827
Mowing and reaping machines	T. Welch	49,184
Mules, Self-acting	A. H. Cummock	49,860
Mules, Self-acting, for spinning	A. H. Cummock	49,891
Musical instruments	G. Woods	45,800
Musical instruments	I. F. Munson	47,851
Musical instruments	G. Woods	49,483
Musical instruments	F. Peabody	50,381
Musical instruments, Electro-magnetic	L. Wesson	47,144
Musical instruments, Mute for	J. F. Stratton	51,363
Musical instruments, Swell for	T. Loud	49,127
Music stand	J. David	50,460
N.		
Nails	C. H. Merrick	49,906
Nails, Cutting	E. Reynolds	47,605
Nails, Extracting	R. McConneli	50,834
Nails, Horseshoe	L. H. Dwelley	48,798
Nails, Horseshoe, Making	S. S. Putnam and L. H. Dwelley	47,070
Nails, Picture, Ornamental head to	A. D. Judd	47,023
Nails, Trunk, Head filling on	Z. Walsh	48,465
Nail machine	J. Russell	49,053
Nail machine, Horseshoe	H. T. Sehnders	49,657
Nail-plate feeders	D. Drawbaugh	51,435
Neckties	T. S. Wiles	46,962
Neckties	A. M. Dexter	51,299
Necktie holders	J. A. Eshleman	46,096
Necktie supporters	G. K. Snow	46,426
Neck yoke	J. Cummings	50,801
Neck yoke	A. B. Coleman	51,147
Neck yoke and whiffletree sockets	C. C. Holman	50,124
Needles	C. O. Crosby	51,150
Needles, Knitting-machine	J. L. and S. L. Otis	47,852
Needles, Knitting	C. P. S. Wardwell	50,188
Neddles, Knitting-machine	J. N. Lamb	51,115
Needles, Knitting-machine	L. W. Fifield	51,577
Newspaper file	W. Burnet	46,072
Newspaper file	J. Frick	49,620
Nightsoil, Vessel for the reception and transportation of	R. A. Smith	48,847
Nippers or handshears	T. Wallis and T. Witbeck	46,960
Nipping and clenching tool	D. A. Wilson	50,539
Nitrate of potassa, Preparation of	H. S. Osborn	47,562
Nozzles, Exhaust, Variable	M. E. Brown	46,445
Numbering and paging machine	G. J. Hill	48,488
Nuts, Making	P. Coleman	46,337
Nuts, Self-locking	J.H.Raymond and W.J.Brassington	46,389
Nuts, Stop-washer for	H. N. Armstrong	48,353
Nut machine	G. Dunham	48,383
Nut machine	G. Dunham	50,923
Nut machine	E. Hubner and C. Hall	51,316
Nut pick and fruit knife	G. Mayland	48,194
O.		
Oar, Rigged, or boat-fin	R. Smith	49,930
Ochre from sand, Separating	J. and A. Hursh	49,273
Odometers	H. R. Coburn	50,456
Offal, Treating	W. Adamson	46,318
Offal, &c., Treating	A. W. Louth	47,027
Oil, Carburetting	J. B. Terry	46,280
Oil, Coal, Purifying	R. A. Chesebrough	49,502
Oil, Distilling	J. J. Johnson	48,285
Oil, Expelling, from the veins of wells	I. Relf	49,922
Oil, &c., Extracting	L. Smith	46,033
Oil, Fish, Separating, from water and other impurities	T. L. Robinson	47,333
Oil, Hydro-carbon	D. D. Van Norman, L. B. Brown, and E. A. Morrison.	49,179
Oil, Hydro-carbon, Separating products of distillation of	L. N. Wilcox	49,020

Invention or Discovery.	Name of Patentee.	No.
Oil, Paint	W. W. Nichols	51,118
Oil, rosin, spirits of turpentine, and other products from pine wood, Obtaining.	A. H. Emery	46,092
Oil, &c., Still for	C. A. Hardy	46,899
Oil, Transporting	W. W. Horton	46,906
Oil barrels, &c., Leaking of, Preventing	G. T. Parry and W. S. Warner	45,855
Oil-boring apparatus	L. Atwood	47,609
Oil chamber and friction wheel	A. J. Ambler	46,867
Oil-cloth	G. Sampson	48,314
Oil ejector	H. Carl	46,824
Oil ejector	G. M. Mowbray	46,925
Oil stills	C. H. Hardy	51,042
Oil wells, Heating by electricity	G. T. Parry and W. S. Warner	48,584
Oil for paint	R. Bartholow	47,083
Oil from running streams, Obtaining	T. S. Scoville	48,841
Oiler, Improved	W. H. Hart	47,896
Ointment	L. Strober	51,099
Ointment	W. Dony	51,154
Opaque figments, Manufacture of	S. Gwynn	51,584
Optical instruments, Adjustment for	C. B. Richards	47,860
Ordnance	C. W. Stafford	46,506
Ordnance	J. B. Eads	46,342
Ordnance	H. Ames	47,177
Ordnance	J. L. Lowry	47,740
Ordnance, Breech-loading	T. Yates	46,417
Ordnance, Manufacture of	T. E. Vickers	46,978
Ordnance, Mounting and operating	J. B. Eads	45,704
Ordnance, Operating	C. Perley	51,475
Ordnance, Operating, on gunboats, &c	W. L. Winans	46,516
Ordnance, Rifling	J. Seipel	50,502
Ordnance, Submarine, Valve for	J. F. Cleu	46,080
Ordnance and projectiles	B. F. Bates and C. R. Macy	46,625
Ores, Auriferous, Treating	W. A. Ott	47,497
Ores, Calcined	G. W. White	46,287
Ores, Copper, Smelting	W. L. Faber	47,407
Ores, &c., Crushing	A. H. Hall	47,297
Ores, Crushing	A. W. Hall	50,407
Ores, Desulphurizing	M. B. Dodge	47,094
Ores, Desulphurizing and amalgamating	E. P. Gardiner	45,991
Ores, Desulphurizing and disintegrating	J. C. Ayer	46,619
Ores, Desulphurizing and disintegrating	J. C. Ayer	46,690
Ores, Desulphurizing and disintegrating	G. Vining	49,322
Ores, Disintegrating, desulphurizing, and oxidizing	J. C. Ayer	46,621
Ores, Gold and other precious metals from, Extracting	H. Wurtz	48,499
Ores, Grinding and amalgamating	M. B. Dodge	47,808
Ores, Metallic, Desulphurizing and oxidizing	M. B. Mason	45,803
Ores, Metals from, Separating	J. D. Whelpley and J. J. Storer	48,226
Ores, Roasting and desulphurizing	H. Bradford	46,520
Ores, Roasting and desulphurizing	R. P. Wilson	46,745
Ores, Roasting and desulphurizing	G. W. Baker	46,984
Ores, Separating	J. Watson	47,476
Ores, Separating and concentrating	A. Hunter	47,828
Ores, Separating and concentrating	E. L. Seymour	51,662
Ores, Silver, Working	W. L. Faber	47,286
Ores, Treating	G. W. Baker	46,983
Ores, Treating	R. Spencer	47,873
Ores, Treating	R. Spencer	47,874
Ores, Treating	S. F. Mackie	49,637
Ores, Treating	H. B. Slidell	49,658
Ores, Treating	H. Halvorson	50,533
Ores, Washing	J. Watson	47,884
Ores, Wrought-iron from the, Manufacture of	H. Boardman	48,478
Ore crushers	J. V. Pomeroy	48,999
Ore crushers	S. Ingersoll	49,032
Ore crushers	A. W. Hall	50,703
Ore crushers	J. Webster and J. G. Morgan	51,104
Ore-crushing stamp	H. J. Behrens	50,326
Ore-crushing stamp	E. Dart	50,342
Ore separator	E. L. Seymour	45,757
Ore separator	S. A. Ambler	51,678
Ores of gold, silver, &c., Roasting, desulphurizing, and disintegrating.	A. K. Johnston	48,284
Organs, Cabinet	G. Woods	49,355
Organs, Cabinet, or harmoniums	T. Atkins	47,080
Organs, Pianos, &c., Tuning	L. V. Hall	50,818
Organic substances, Preserving	J. G. Staunton	45,762
Ornamenting	H. Harrop	46,354
Ornamenting show cards	F. B. Scott	49,444
Orreries	J. Moore	51,072
Ovens, Cook	J. Bowers	50,552
Ovens, Detachable	A. B. Nott	48,200
Ovens for converting iron into steel	W. A. Sweet	45,878
Ovens for cooking	J. Chilcott	49,503
Oxides, Metallic, Purifying	A. Monnier	46,924

Invention or Discovery.	Name of Patentee.	No.
Ox yokes	J. H. Whitney	46, 742
Ox yokes	W. R. Close	47, 523
Ox yokes	E. S. Woodford	47, 592
Ox yokes	W. Perrin	48, 997
Ox yokes, Bowpin for	O. O. Woodruff	47, 149
Oyster diggers, Winders for	H. S. Lawrence	46, 912
Oyster dredgers	W. Belbin	45, 904
P.		
Packages, boxes, &c., Manufacture of	H. Everett	47, 532
Packages, letters, &c., Transmitting and delivering	A. E. Beach	49, 699
Packages and mails, Delivering, from railroad cars	C. D. Everett	51, 162
Packages and mails on railroad cars, Receiving and delivering	W. J. Ketcham	48, 954
Packing, Elastic, for the exterior of pumps in deep wells	J. Moulton	46, 860
Packing, Metallic, for steam piston	H. D. Dunbar	50, 697
Packing, Piston	A. J. Stevens	46, 723
Packing, Piston	W. R. Thomas	46, 733
Packing, Piston, for pumps	D. B. Fuller	45, 989
Packing, Tube	S. L. Fox	45, 822
Packing, Well	J. Calkins and J. Frazier	50, 558
Packing former, India-rubber	W. Webster	47, 479
Packing rings for piston rods	W. C. Conwell	49, 725
Packing tubes of oil wells	R. A. Wilder	50, 194
Packing for artesian wells	S. Swartz	48, 599
Packing for deep wells	F. Martin	49, 903
Packing of pistons in deep wells, Adjusting	E. D. Brown	50, 898
Packing for oil wells	J. R. Cross	46, 217
Packing for oil wells	J. R. Cross	50, 910
Packing for oil well tubes	C. L. Noe	49, 544
Packing for oil well tubes	P. Sicouret	49, 579
Packing for oil well tubes	G. E. Mills	49, 778
Packing for oil well tubes	J. Parham, jr	49, 783
Packing for pistons, &c	J. V. and W. H. Miller	47, 119
Packing for rifled projectiles	F. Schenkl	45, 951
Packing of stuffing boxes, &c., Lubricating	J. B. and W. H. Miller	47, 170
Packing for tubes of boilers or condensers	J. Newkirk	49, 295
Pads, Breast, Ladies'	J. A. Mason	45, 843
Paddlewheel, Feathering	G. A. Keene	45, 835
Padlock	W. Bohannan	46, 539
Padlock	E. Coyle	46, 643
Padlock	H. Jackson	49, 113
Padlock	H. D. Blake	49, 468
Padlock	T. Slaight	51, 488
Padlock	V. Enders	51, 576
Paging and numbering machine	G. J. Hill	48, 488
Pails, Painting, Tool for	J. Carter	46, 075
Paint	E. Battley	49, 467
Paint	J. B. Hodgskins	51, 317
Paints, enamels, &c., Composition for	M. W. Brown	49, 705
Paint composition	J. Ball and J. Ford	49, 066
Paint composition	J. C. Wendrem	49, 201
Paint compound	D. P. Flinn	50, 608
Paint for ships' bottoms	J. G. Tarr and A. H. Wonson	48, 221
Paint for ships' bottoms	D. Parkhurst	48, 583
Paint for the bottoms of ships	J. G. Tarr and A. H. Wonson	48, 323
Painting pails, Tool for	J. Carter	46, 075
Pan, Amalgamating	S. W. Bullock	48, 480
Pan, Dust, and brush	C. H. Parker and G. Burnham	50, 270
Pan, Evaporating	G. Bez	47, 511
Pan, Evaporating	H. F. Bartlett	49, 694
Pans, Metal, Sheet	C. F. Chambers	48, 516
Pans, Metal, Sheet, Pressing	F. M. Woods	50, 410
Pans, Milk	F. J. May	50, 256
Pan, Rendering	A. Black	47, 788
Pan, Sap	H. Earl	47, 401
Pan, scale and funnel	A. A. Smith	50, 636
Panoramic and photographic views, Taking	J. R. Johnson and J. A. Harrison	51, 279
Pantaloon	B. J. Greely	50, 242
Pantaloon guard, boot drawer and spur carriers, Combined	E. P. Watson	45, 776
Pantry	J. Shattuck	48, 631
Pap or slop of clay for potters' use	J. Muir	45, 736
Paper	J. M. Allen	49, 209
Paper	J. W. Dixon	51, 568
Paper	J. B. Read	51, 751
Paper, blotter weight, rule, cutter, and square, Combination of	A. H. Trego	50, 404
Paper, Cigarette	F. X. Hazman and L. L. Arnold	48, 936
Paper, Cutting	C. Wells and H. Barth	49, 018
Paper, Cutting, in sheets	J. Hatch	48, 395
Paper, Delivering, from printing presses	C. O. Furbush	47, 411
Paper, Drying	J. R. Rogers	46, 026
Paper, Fastening for, Adhesive	G. R. Burdon	46, 071
Paper, Lace, Make	C. Lang	46, 115
Paper, Lining, Substitute for	G. Munger	50, 485

Invention or Discovery.	Name of Patentee.	No.
Paper, Preparing, for photographic use	J. D. W. Brinkerhoff	51,010
Paper, Punching, for telegraphs	M. Lefferts	51,464
Paper, Sheets of, Plating or finishing	C. T. Brainbridge	49,691
Paper, Tobacco	H. J. Hall	46,233
Paper bags	J. Arkell and B. Smith	48,036
Paper bellows	M. P. Dorsch	46,340
Paper board	J. F. Jones	49,119
Paper board	J. F. Jones	49,884
Paper cutter and ruler	J. Woodward	48,756
Paper-cutting machine	W. Smith	51,669
Paper fastener	Z. W. Denham	47,526
Paper file	W. Burnet	45,813
Paper files	W. L. Woods	46,415
Paper file	G. Lautenschlager	48,568
Paper hangings, Printing	F. L. Munroe and T. Mason	48,199
Paper holder	J. W. Foard	49,744
Paper machinery	H. Chapman	51,293
Paper-making machines	J. Scaulan	48,347
Paper-making machines, Drying felt for	S. W. Baker	50,323
Paper pulp	J. A. Roth	49,480
Paper pulp	J. W. Dixon	51,430
Paper pulp	J. W. Dixon	51,431
Paper pulp	J. W. Dixon	51,433
Paper pulp	J. W. Dixon	51,570
Paper pulp	J. W. Dixon	51,571
Paper pulp	J. W. Dixon	51,572
Paper pulp, Bleaching	J. W. Dixon	51,569
Paper pulp, Grinding	J. F. Jones	47,425
Paper pulp, Manufacture of, Rotary boiler for	H. B. Meech	45,845
Paper pulp, Manufacture of, Treating hemp, flax, &c,, for	M. A. Cushing	50,419
Paper pulp, Treating straw for	H. B. Meech	50,835
Paper pulp, Treating straw to obtain	T. O. Nixon	47,217
Paper pulp, Treating vegetable fibre for the manufacture of	J. W. Dixon	51,706
Paper pulp, Vegetable substances for, Disintegrating	Z. G. A. N. P. Orioli. A. A Fredet, and P. A. H. Matussiere.	47,505
Paper pulp from corn stalks	J. W. Dixon	51,432
Paper stock	H. Betts	49,069
Paper stock, Manufacture of	W. Deltour	45,791
Paper stock, Preparing, Engine for	J. G. Fuller	46,893
Paper stuff, Making	S. Lenker and H. H. Spencer	46,915
Paper washer for paper stock	G. E. Sellers	46,030
Paper for telegraphs, Perforating	L. Bradley	48,479
Paraffine, tar, &c., Treating oil wells to remove	J. Frazier	47,410
Paraffine, Treating oil wells for the removal of	J. Frazier	49,995
Paste, Blueing	R. G. Vassar	46,160
Pasteboard, Cutting	C. E. Clark	46,448
Pasteboard, Cutting and scoring	S. Orth	49,910
Pasteboard for boxes, Cutting	E. E. Clarke	46,522
Pasteboard for boxes, Cutting	E. E. Clarke	46,604
Pattern, Boot and shoe	N. Silvester	50,043
Pattern for cutting boots	O. D. Drew	47,623
Pavement, Composition	D. C. Heller	51,513
Pawl and ratchet, Automatic	O. Gilder	46,791
Pawl and ratchet, Feed wheels as substitutes for	O. C. Phelps	47,126
Pea-sheller and cherry-stoner	G. Sanford	50,278
Peat, coal dust, &c., Consolidating	W. J. Cheyney and E. T. Dieterichs.	46,777
Peat, Drying and charring	F. L. H. Danchell	47,162
Peat, Preparing	M. S. Roberts	49,438
Peat, Preparing, for fuel	S. Marden	51,390
Peat, Tempering and preparing	N. F. Potter	47,331
Peat, Treating	J. H. Smith	50,743
Peat, Treating	J. H. Smith	51,231
Peat for fuel, Preparing	N. F. Potter	47,564
Peat for fuel, Preparing	A. Betteley	49,218
Peat for fuel, Preparing	A. Betteley	51,004
Pedestal, Draught, and soda-water cooler	G. T. Palmer	46,581
Pedestals for railroad cars	J. P. Wendell and S. Ustick	50,427
Pegger, Hand	J. H. Brown	50,298
Pegging machine, Hand	L. Goddu	51,387
Pen, Fountain	B. J. La Mothe	47,132
Pen, Fountain	G. F. Hawkes	50,470
Pen, Fountain	L. M. Sanford and J. P. Beebe	51,090
Pen distributor	S. A. Potter	48,717
Pen-holder	S. Walker	45,884
Pen-holder	T. C. Ball	46,290
Pen-holder	A. Masson and P. H. Cary	50,543
Pen-holder	F. Brackett	50,897
Pen-holder and pencil, Weighing attachment for	D. A. B. Savy	49,059
Penman's assistant	W. King	51,530
Pen-rack, calendar, and letter-balance, Combination of	H. N. Taft	45,770
Pen and pencil case	T. W. Cox	48,374
Pen and pencil case	W. S. Hicks	49,878
Pencil-point protector and mark eraser	J. B. Hodgskin	46,358

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Pencil sharpener	R. Wright	46,289
Pencil sharpener	H. P. Andrews	49,210
Pencil and craser	W. P. Evans and L. D. Benner	47,406
Pencil and pen case	F. W. Cox	48,374
Pencil and pen case	W. S. Hicks	49,788
Petroleum, benzole, &c., Deodorizing	J. Green	46,794
Petroleum, Burning	E. McKinney	48,967
Petroleum, &c., Distillation of	J. I. Vaughan	49,689
Petroleum, &c., Distilling	E. Braggins	46,633
Petroleum, &c., Distilling	A. Millochau	46,923
Petroleum, &c., Distilling	C. M. Warren	47,235
Petroleum, Distilling	A. Dubreuil	48,265
Petroleum, Distilling	R. A. Chesebrough	48,367
Petroleum, Distilling	E. F. Prentiss and R. A. Robertson	48,435
Petroleum, Distilling	L. S. Falls	49,739
Petroleum, Distilling	A. Kreusler	50,368
Petroleum, Distilling	H. Fleury	50,571
Petroleum, Distilling	A. Dubreuil	51,156
Petroleum, Distilling, Stills for	J. Rogers	50,276
Petroleum, Filtering	R. A. Chesebrough	49,230
Petroleum, Gas from, Generating	D. M. Graham	47,634
Petroleum, Heating and conveying	J. Casey	47,701
Petroleum, Preparing, for the manufacture of paints, &c	R. Bartholow	47,084
Petroleum, Refining and distilling	J. Perkins and W. H. Burnet	47,125
Petroleum, Refining, by filtration	R. A. Chesebrough	51,557
Petroleum, Refining, by filtration	R. A. Chesebrough	51,558
Petroleum, Testing	A. Millochau	49,777
Petroleum, Transportation of	H. J. Lambert	49,901
Photo-electrotype	W. A. Leggs and G. E. Desbarats	48,035
Phosphates, Fertilizing, Manufacturing	G. A. Liebig and E. K. Cooper	45,961
Photographers' decanter	E. W. Doty, E. A. and W. F. Stein	48,664
Photographs, Cutting	T. Bergner	46,066
Photographs, Cutting	L. A. Foulley	46,099
Photographs, To preserve and exhibit	C. Robinson	47,222
Photographs, Pressing and smoothing	D. and J. Rupp	50,632
Photograph prints, Washing	M. Ormsbee	46,927
Photographic baths	N. Wright	50,081
Photographic cameras, &c., Achromatic object glass for	H. Roettger	47,336
Photographic camera stands	H. Manger	48,193
Photographic card mount	T. Mayhew	46,008
Photographic lens	J. Schnitzer	49,160
Photographic mounting and printing	G. W. Doty	69,612
Photographic name plate	J. E. Mackerley	47,438
Photographic panoramic views, Taking	J. R. Johnson and J. A. Harrison	51,279
Photographic pictures, Deflector for	D. Shive	50,284
Photographic pictures, Preserving and exhibiting	C. Robinson	50,498
Photographic picture-holder	J. Buckett	47,515
Photographic plate-holders, Rotary	C. H. Shute	46,503
Photographic prints, Coloring	I. O. Beyse	50,891
Photographic printing, Pressure frames for	L. E. Denison	51,699
Photographic process	J. Wothly	49,488
Photography	W. H. Smith	50,544
Pianos	A. Gunther	49,399
Pianos, organs, &c., Tuning	L. V. Hall	50,818
Pianos, Repeating action for	F. Farholtz	49,394
Pianos, Stringing	A. Choplain and P. E. Chollet	51,559
Piano-fortes	D. Decker	45,818
Piano-fortes	M. Vergenes	45,943
Piano-fortes	S. T. Parmelee	46,759
Piano-fortes	S. B. Driggs	47,196
Piano-forte action	M. Herter	51,588
Piano-forte action	S. P. Brooks	47,922
Piano-forte action	F. Koth	48,565
Piano-forteaction	J. H. Tibbets	48,741
Piano-forte action	J. H. Tibbets	48,741
Pick, Mill-stone	D. C. Stone	46,035
Pick, Mill-stone	C. R. Elmer	51,030
Pick, Mining	H. L. Lowman	48,080
Picking, carding, and other similar engines, Means for feeding wool and other fibrous material to.	S. R. Parkhurst	47,976
Pictures, Glass or porcelain, Printing frames for	W. J. Kuhns	51,323
Pictures, Photographic, Preserving and exhibiting	C. Robinson	50,498
Picture frame	M. Ormsbee	46,382
Picture frame, Bevelling	O. T. Bedell	49,965
Picture card frame	R. W. Potter	46,699
Pier, wharf, and warehouse	J. B. Hyde	49,475
Piers for bridges	E. W. Smith	48,317
Piers and bulkheads	S. J. Seely	46,144
Pigments, Opaque, Manufacture of	S. Gwynn	51,584
Piles, Wooden, Protecting the surface of	L. J. Henry	46,049
Pill machine	D. G. Tittle	50,288
Pins, Dentists', Heading	W. D. Duff and J. J. Griffith	46,786
Pins, Flask	B. B. Whaley	47,059
Pins, Wrist, Making	E. P. Russell	49,306

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Pipes, Blast, Hot	C. Glidden	46, 559
Pipes, Blast, Hot	W. B. Pollock	46, 698
Pipes, Blow	W. F. Gillinder	51, 386
Pipes, Casting	T. J. Lovegrove	47, 901
Pipes, Cement	J. E. Earle	49, 827
Pipes, Cement	W. Goodwin	49, 828
Pipes, Flexible, for mining	O. Clark	46, 295
Pipes, Iron, Brazing brass screws to	W. B. Scaife	46, 395
Pipes, Joints for	W. R. Maffit	46, 808
Pipes, Lead, Tin-lined	W. A. Shaw	49, 040
Pipes, Smoking	F. Fickey, jr	45, 916
Pipes, Smoking	J. D. Stewart	46, 598
Pipe, Smoking	J. P. Baxter	46, 870
Pipes, Smoking	W. T. Slocum	47, 752
Pipes, Stove	D. H. Metcalf and H. J. Shoemaker	45, 732
Pipes, Tobacco	L. Saarback	46, 269
Pipes, Tobacco	R. Nagler	46, 693
Pipes, Tobacco	L. C. Walker	46, 959
Pipes, Tobacco	G. W. Francis and W. L. Woods	47, 199
Pipes, Tobacco	M. R. Griswold	47, 814
Pipes, Tobacco	T. Liller	47, 964
Pipes, Tobacco	F. Doellbor	48, 162
Pipes, Tobacco	J. D. Stewart	48, 320
Pipes, Tobacco	C. Hoffman	49, 268
Pipes, Tobacco	E. Hoyt	50, 127
Pipes, Tobacco	F. Schulte	59, 962
Pipes, Tobacco	J. Cunningham	51, 024
Pipes, Underground	A. A. Perkins	46, 134
Pipes, Water	J. S. Patrick	50, 154
Pipes, Water	R. Skinner	51, 627
Pipes, Water, Connections for	R. Farr	47, 002
Pipes, Water, Preventing from bursting	J. Bevan	46, 773
Pipes, Water, Tapping	P. Ball	45, 964
Pipes, Water and other, Tapping branch for	H. Knight	46, 246
Pipe core	W. and G. Braid	49, 368
Pipe tongs	S. F. Ganrage	48, 017
Pipe-stem, Tobacco	T. Smith and H. J. Brown	46, 505
Pipes or tubes for wells	T. Dutton and T. Maguire	30, 343
Pistol and pocket-knife, Combined	A. J. Peavey	49, 784
Piston, Engine, Steam	F. J. Roth and D. R. Gamble	51, 622
Pistons, &c., Packing for	J. V. and W. H. Miller	47, 119
Pistons, Pump	W. F. Dodge	47, 095
Pistons, Steam, Metallic packing for	H. D. Dunbar	50, 697
Piston packing	W. R. Thomas	46, 333
Piston packing	A. J. Stevens	46, 723
Piston packing	A. Fulton	48, 547
Piston packing	E. Kendall	48, 692
Piston packing	J. W. Holloway	48, 945
Piston packing	D. Clark	49, 379
Piston packing	W. Buchanan	49, 853
Piston packing	A. Tannock	50, 855
Piston packing	J. Myers	50, 661
Piston packing	J. Wheclock	51, 250
Piston packing	S. Goodfellow	51, 449
Piston packing, of, in deep well, Adjusting	E. D. Brown	50, 898
Piston packing for deep wells	C. H. Jackson	49, 759
Piston rod, Guide for	E. Dunscomb	47, 283
Piston rods, Packing for	W. E. Davis	51, 027
Piston rods, Packing rings for	W. C. Conwell	49, 725
Piston for pumps	D. C. Rowe	48, 098
Piston for steam engines	N. P. Stevens	48, 851
Pitch	A. H. Emery	49, 248
Pitchers, Glass, Silvering	J. W. Hines	47, 101
Pitcher, Ice	F. C. Meyer	49, 351
Pitcher, Ice	C. Conradt	49, 724
Pitcher, Molasses	J. A. Parise and C. W. McCord	50, 620
Pitchers, tumblers, &c	G. G. Percival	48, 996
Planes, Bench	W. H. Taber	46, 614
Planes, Bench	G. Mullear	50, 378
Planes, Bench	L. C. Bliss	50, 530
Planes, Edge	M. Newman	47, 973
Planes, Splint	J. Dempsey	51, 153
Planes, Splint	H. Ogborn	50, 947
Plane stock, Mounting	J. Richards	46, 392
Plane stocks, Mortising	J. Richards	46, 391
Plane-stocks, Throats in, Dressing the	F. B. Marble	46, 372
Planing machine	H. A. Lee	48, 185
Planing machine	J. Closs	49, 981
Planing machine	H. B. Smith	50, 178
Planing machine	H. B. Smith	50, 637
Plants, Fibrous, Disintegrating of	J. Evans	50, 108
Plants, Growing, Distributing fertilizers to	D. C. Colby	48, 155
Planters	W. H. Boyle	47, 614
Planters, Corn	H. Jordan	45, 721

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Planters, Corn	G. Bunch and J. A. Price	45, 971
Planter, Corn	J. N. Smith	46, 398
Planters, Corn	G. J. Bergen	46, 629
Planters, Corn	W. E. Chesney	46, 637
Planters, Corn	C. L. Westbrook	46, 738
Planter, Corn	J. C. Thomas	47, 468
Planters, Corn	J. T. Bryan	47, 514
Planters, Corn	J. N. Adams	47, 608
Planters, Corn	J. R. Davis	57, 622
Planters, Corn	W. H. Hunter	47, 728
Planters, Corn	M. Saviers	47, 987
Planters, Corn	J. Seibel	47, 990
Planters, Corn	J. Cross	48, 130
Planters, Corn	W. Blessing	48, 150
Planters, Corn	E. M. Wright	48, 229
Planters, Corn	F. Dean	48, 528
Planters, Corn	R. Burns	48, 654
Planters, Corn	P. H. Kimball	49, 121
Planters, Corn	J. W. Fawkes	49, 250
Planters, Corn	A. H. Hazard	49, 265
Planters, Corn	G. J. Bergen	49, 601
Planters, Corn	A. F. Hines	60, 246
Planters, Corn	J. Davis	50, 915
Planters, Corn	N. H. Purcell	50, 954
Planters, Corn	D. J. Ely	51, 575
Planters, Corn, Hand	M. S. Orton	46, 928
Planters, Corn, Hand	J. Morris	48, 197
Planters, Corn, Hand	C. H. Kellogg	48, 562
Planters, Corn, and cultivators, Combined	J. Palmer	48, 991
Planters, Corn, and roller, Combined	P. Conrad	46, 083
Planters, Cotton, and seed	B. and N. Platt	49, 150
Planters, Potato	L. A. Aspinwall	50, 890
Planters, Potato, seeder, and cultivator, Combined	B. F. Field	50, 202
Planters, Seed	J. F. Keller	46, 364
Planters, Seed	G. W. Brown	46, 615
Planters, Seed	L. Woodruff	47, 593
Planters, Seed	M. Hayden	47, 637
Planters, Seed	G. M. and S. H. Seward	48, 104
Planters, Seed	A. Bugbee	50, 065
Planters, Seed	J. Miller	50, 213
Planters, Seed	H. V. Davis	50, 657
Planters, Seed, Cotton	I. Myers and M. D. Wellman	46, 130
Planters, Seed, Cotton	F. M. Bacon	50, 090
Planters, Seed and potato	O. N. Chase	45, 976
Planter and cultivator	E. M. Wright	49, 204
Planter and cultivator, Combined	I. W. McGaffey	47, 029
Planter and cultivator, Combined	P. Sinnhold	49, 661
Planting, Field marker for	W. Goltry	48, 551
Planting, Ground for, Marking	G. M. Johnson	51, 725
Planting, hoeing, and digging potatoes	J. C. Clement	51, 560
Plaster, Sewing, Machine for	A. Bugbee	49, 973
Planter and seed sower and roller combined	H. S. Babcock and S. H. Jenks	45, 686
Plates, Intagliotype	E. B. Larcher	48, 290
Plates, jewelry, &c., Ornamenting	O. L. Parmenter	47, 853
Plate-holders, Photographic, Rotary	C. H. Shute	46, 503
Platform, Landing, for steamboats and other vessels	N. W. Wheeler	47, 482
Platform and windlass, Combined	T. I. Burhyte	50, 787
Platinum, Coating glass with	L. P. Angenard	46, 767
Ploughs	J. Hanes	45, 995
Ploughs	E. Ball	46, 321
Ploughs	D. F. Humphrey	46, 362
Ploughs	W. B. Young	46, 418
Ploughs	J. Deere	46, 454
Ploughs	J. B. Atwater	46, 768
Ploughs	J. Kilmer	46, 755
Ploughs	N. Platt	46, 937
Ploughs	J. George	47, 294
Ploughs	E. Winslow	47, 486
Ploughs	V. Felker	48, 387
Ploughs	R. Deighton, jr	49, 389
Ploughs	O. P. Dills	49, 733
Ploughs	C. F. Johnson, jr	49, 761
Ploughs	W. S. Spratt	49, 799
Ploughs	E. G. Whiting	49, 816
Ploughs	C. W. Sykes	50, 749
Ploughs	I. F. Nutting	50, 837
Ploughs	T. J. Burhyte	51, 014
Ploughs	J. Wallace	51, 245
Ploughs, Corn	W. S. Weir, jr	46, 285
Ploughs, Corn	T. W. Hammon	46, 752
Ploughs, Cultivator	J. R. Finley	47, 534
Ploughs, Cultivator	C. C. Baum	51, 682
Ploughs, Ditching and mould	E. H. Morton	45, 735
Ploughs, Gang	T. Short	45, 897

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Ploughs, Gang	W. H. Freeman	45, 988
Ploughs, Gang	J. C. Pfeil	46, 137
Ploughs, Gang	H. Webster	46, 164
Ploughs, Gang	L. Holloway	46, 903
Ploughs, Gang	J. E. Travis	47, 686
Ploughs, Gang	P. M. Gilbert	47, 942
Ploughs, Gang	J. Seibel	47, 989
Ploughs, Gang	J. C. Brown and G. H. Slimpert	48, 049
Ploughs, Gang	A. Hammond	48, 679
Ploughs, Gang	J. H. LaBoyteaux and C. A. Ashton	48, 696
Ploughs, Gang	J. B. Skinner	48, 846
Ploughs, Gang	C. W. Corr	49, 087
Ploughs, Gang	H. Smith	49, 564
Ploughs, Gang	J. S. Padon	49, 911
Ploughs, Gang	M. Sattley	51, 358
Ploughs, Gang	C. Atwood	51, 536
Ploughs, Gang	J. F. and W. L. Black	51, 543
Ploughs, Gang, Cultivator	T. T. Prosser, M. C. and K. A. Darling.	45, 750
Ploughs, Gang, and cultivator	S. H. Mitchell	46, 378
Ploughs, Gang, Sulky	I. C. Pratt	46, 974
Ploughs, Horse	J. B. Sweetland	48, 600
Ploughs, Rotary, Traction wheel for	L. S. Fithian	47, 005
Ploughs, Shovel	C. Ford	47, 536
Ploughs, Side-hill	N. Vars	45, 882
Ploughs, Side-hill	E. McKesson	45, 929
Ploughs, Side-hill	H. B. Smith	46, 716
Ploughs, Snow	W. N. Ball	46, 322
Ploughs, Snow	A. L. Bausman	49, 216
Ploughs, Snow	E. A. Putnam	50, 031
Ploughs, Sulky	J. Brewer	48, 512
Ploughs, Sulky	J. C. Pratt	49, 833
Ploughs, Sulky	A. Keith	50, 828
Ploughs, Wheeled	R. Wilson	46, 412
Plough casting	F. F. Smith	47, 753
Plough clevis	A. Shogren	48, 844
Ploughshares	A. Maschka	50, 942
Plugging instruments for the teeth	B. Wood	46, 602
Plugging tool for dentists, Self-feeding	M. Burchardt	50, 428
Pockets, Safety	G. G. Hickman	50, , 82
Pockets, Suspender	J. F. Clark	51, 146
Pocket-book	J. F. Dubber	45, 819
Pocket-book	L. Saarback	48, 727
Pocket-book and portmonnaies	B. F. Cowan	50, 909
Pond, Skating, Artificial	M. C. Campbell	47, 391
Pontil, Clamping	E. H. James and N. B. Gatchell	51, 058
Porcelain to receive designs, Preparing the surface of	J. Cartisser	50, 561
Porous and fibrous materials, Impregnating	S. Gwynn	46, 466
Portmonnaies and pocket-books	B. F. Cowan	50, 909
Portfolio stand	L. Dubernet	47, 624
Porthole closers, Submarine	J. H. Kavanagh	48, 074
Post, Lamp, Street	P. H. Branson	46, 444
Post, Lamp, Street gas	J. T. P. Hunt	45, 717
Pot, Coffee	L. H. Little	46, 917
Pot, Flower, Cleansing	S. W. Curtis	48, 912
Pots, Tea and Coffee, Handle for	G. B. Halsted	48, 061
Pots for the manufacture of white lead	J. H. Chadwick	51, 018
Potash, Prussiate of, Manufacture of	D. B. and A. D. Coles	50, 907
Potash or soda from alkaline silicates, Liberating	F. O. Ward	46, 979
Potatoes, Planting	J. S. True	46, 281
Potatoes, Planting, hoeing and digging	J. C. Clement	51, 560
Potato digger	J. O. Ives	49, 413
Potato digger	J. J. Hill	49, 521
Potato digger	L. A. Aspinwall	50, 889
Potato digger	E. S. Lenox	51, 731
Potato digger and cultivator, Combined	M. and J. W. Chandler	48, 616
Potato digger and separator	J. W. Bartlett	47, 916
Potato masher and meat pounder	J. A. McNeil	50, 724
Potato seedlings, Instrument for cutting	W. P. L. Herr	47, 106
Potters' ware, Moulding	E. N. Blackmer	50, 791
Pottery ware, Protecting, Safeguard for	B. Jackson	46, 109
Pottery and such like wares	T. L. and R. Boote	51, 123
Powder for facing moulds	J. Nichols and W. Batty	46, 578
Powder for lighting cigars, &c	C. W. Roesling	47, 335
Powder for polishing	A. Hamilton and J. D. Gray	50, 573
Powers, Animal	C. M. and G. Richards	47, 659
Powers, Horse	S. B. Haines	45, 921
Power, Horse	J. W. Reid	47, 456
Power, Horse	E. P. Russell	47, 662
Powers, Horse	D. W. Hunt	47, 830
Powers, Horse	G. Sanford	48, 212
Power, Manual	J. C. Overpeck	47, 447
Power, Motive	W. H. Hartman	47, 717
Power, Motive, Producing, by the vertical rise and fall of the tide.	A. W. Scharit	45, 867

Invention or Discovery.	Name of Patentee.	No.
Power gaining machine	H. Bickel	48,042
Preserving and packing houses, refrigerators, and other similar structures, Cooling.	D. E. Somes	46,595
Press	G. E. Harding	45,711
Press	C. H. Robinson	45,754
Press	J. A. McGillivrae	45,844
Press	P. C. Ingersoll	46,051
Press	S. J. Austin	46,205
Press	H. Dodge	47,192
Press	L. Boudreaux	47,387
Press	T. B. Webster	49,046
Press	J. Lewis	51,732
Press, Automatic	P. Hayden	49,877
Press, Baling	C. H. Robinson	45,863
Press, Baling	G. C. Paine	47,124
Press, Baling	F. F. Cornell, jr	47,800
Press, Baling	F. F. Cornell, jr	48,261
Press, Baling	H. F. Hicks	48,487
Press, Baling	C. B. Brooks	48,151
Press, Baling	W. P. Craig	48,523
Press, Baling	J. P. White	49,815
Press, Baling	F. F. Cornell, jr	50,798
Press, Baling	G. W. Hart	51,043
Press, Baling, Beating device for	L. C. Field	48,621
Press, Baling, Horizontal	J. D. Wilber	47,591
Press, Beater	P. K. Dederick	48,619
Press, Beater	L. C. Field	49,193
Press, Brick	J. J. Alvord	50,088
Press, Cider	C. H. Thomas	50,665
Press, Copying	P. Lawrence and G. Jeffereys	48,021
Press, &c., Copying	W. Shriver	48,217
Press, Cotton	G. C. Davies	47,490
Press, Cotton	W. A. Shepard	50,635
Press, Cotton	I. J. Way	50,971
Press, Drop	H. C. Gladding	45,792
Press, Embossing and seal	B. B. Hill	47,821
Press, Embossing, Removing paper collars, cards, &c., from	T. Tebbetts	50,514
Press, Embossing, and hand stamp	W. Burrows	50,556
Press, Filtering	L. P. R. De Massy	51,124
Press, Filtering	L. P. R. De Massy	51,278
Press, Hay	A. Hayford and O. Strout	47,950
Press, Hay	E. A. Field	51,709
Press, Hay, Beater, Capstan for working	P. K. Dederick	49,678
Press, Hay and cotton	B. F. Dunning	46,785
Press, Hay and cotton	C. H. Parshall	51,615
Press, Lard	J. Rayner	50,494
Press, Oil	W. V. McKenzie	47,441
Press, Oil	J. Marshall	48,140
Press, Parallel, or other	C. H. Clark	51,694
Press, Portable	T. L. Chase	51,019
Press, Power	C. W. Johnson	50,826
Press, Printing, Lithographic	E. Reynolds	46,390
Press, Printing	R. W. Moran	47,319
Press, Printing	H. Redlich	47,454
Press, Printing	J. Sangster	48,493
Press, Printing, Delivering paper from	C. O. Furbush	47,411
Press, Screw	T. B. Webster	49,047
Press, Sugar	D. C. and L. S. Riggs	47,984
Press, Sugar-cane	J. C. Crismar	46,781
Press, Upsetting	D. A. Boland	50,448
Press, Wood	J. W. Phillips	47,037
Press, Wool	R. Greene	47,064
Press, Wool	J. Crane	48,159
Press, Wool	T. N. Morse	48,705
Press, Wool	U. B. Williams	51,377
Press for baling cotton	W. Norman	50,772
Press for forming metal basins	G. Murray	51,342
Press for pressing gunpowder	L. DuPont	50,568
Pressing beefsteak, paring apples, and sharpening knives	B. F. Alexander	50,671
Pressure and gravitating machines	C. Monson	50,151
Printers' blanket	J. Taylor	49,804
Printers' rollers, Refining the surface of	C. Sentell	48,453
Printing	C. N. Morris	50,612
Printing, Apparatus for, and flexible types	H. Tubesing	47,262
Printing, graining, &c., Flexible forms for	H. Tubesing	46,736
Printing, Photographic, Pressure frames for	L. E. Denison	51,699
Printing checks	J. Pollak	48,589
Printing frame, Photographic	N. F. English	47,063
Printing frame, Photographic	S. K. Jones	49,531
Printing frames for porcelain or glass pictures, Photographic	W. J. Kuhns	51,323
Printing machines, Blankets of, Washing	T. W. Clark	48,053
Printing and ruling machines, Combination of	H. J. Hewett	50,475
Privies, Construction of	E. E. Clarke	50,654
Projectiles	T. G. Orwig	46,490

Invention or Discovery.	Name of Patentee.	No.
Projectiles, Banding and covering	J. Absterdam	50,783
Projectiles, Packing, for rifled ordnance	C. Arick	47,078
Projectiles, Packing, for rifled ordnance	A. J. S. Molinard	47,213
Projectiles, Packing, for rifled ordnance	B. B. Hotchkiss	47,725
Projectiles, Packing, for rifled ordnance	W. H. Smith	47,754
Projectiles, Rifled, Packing for	F. Schenkl	45,951
Projectiles, Sabots	E. A. Dana	50,692
Projectiles for ordnance, Arrow	W. Cousins	48,371
Projectiles for ordnance	O. Lugo	49,773
Projectiles for rifled fire-arms	C. Sharp	48,729
Projectiles for rifled ordnance, Packing	B. B. Hotchkiss	50,357
Projectiles and ordnance	B. F. Bates and C. R. Macy	46,625
Propeller	J. Busser	45,697
Propeller	J. Sutherland	47,137
Propeller	F. Jacob	50,714
Propeller	E. Dalman Y. Sala	51,025
Propeller, Canal	N. P. Otis	47,657
Propeller, Endless chain	A. McDonald	48,574
Propeller, Marine	A. S. Hatch	47,419
Propeller, Marine	W. D. Wilson	51,640
Propeller, Pole	A. F. Stelle	47,048
Propeller, Reciprocating	M. Dupuy	49,095
Propeller, Screw	F. Jacob	46,004
Propeller, Screw	J. B. Root	47,864
Propeller, Screw	L. H. Colborn	51,295
Propeller blades, Screw	C. C. Gates	51,446
Propelling apparatus	A. Gemünder	50,574
Prussian blue, Manufacture of	J. M. Merryman	45,846
Pulleys, Loose	N. P. Otis	51,077
Pulleys, Securing	J. W. Reid	51,218
Pulleys, Tension	A. B. Nimbs	47,323
Pulleys, Tightening, by friction	F. Skinner	49,312
Pulleys, Window cord	M. C. Ames	47,150
Pulley block	P. Lück	47,558
Pulley block	S. Van Hennick and T. Allen	47,471
Pulley block	R. P. Fuller	47,598
Pulpy matter, Fibrous plants from, Separating	J. R. Beckwith	51,413
Pulverizer, Earth	W. Elwell	49,513
Pulverizing the soil	L. S. Fithian	46,048
Pulverizing tailings from gold-washer	J. H. Hanchett	47,818
Pulverizing and furrowing device	C. Shabley	51,757
Pumps	E. B. Jucket	45,722
Pumps	W. E. Waters	45,799
Pumps	J. H. Burns	46,073
Pumps	N. Hotz	46,360
Pumps	M. R. Clapp	46,638
Pumps	T. J. Linton	46,683
Pumps	T. Rider	47,075
Pumps	J. F. White	47,146
Pumps	W. F. Dodge	47,193
Pumps	K. Goddard	47,200
Pumps	J. Hampson and G. Laduc	47,299
Pumps	N. Sutton	47,344
Pumps	A. F. Porter	47,452
Pumps	G. Marshall	47,652
Pumps	W. W. Le Van	47,737
Pumps	A. D. Foster	48,165
Pumps	J. Peabody	48,202
Pumps	B. S. Hill	48,401
Pumps	J. Boley	48,647
Pumps	H. M. Keith	48,691
Pumps	A. Carver	48,707
Pumps	F. Ransom	48,720
Pumps	G. E. Mills	48,826
Pumps	W. D. Hooker	49,408
Pumps	R. A. McCauley	49,640
Pumps	J. Camack	49,716
Pumps	W. H. Culp	50,911
Pumps	J. Eldridge	51,028
Pumps	J. G. Hovey	51,183
Pumps	B. Frazee	51,302
Pumps	F. S. Pease	51,474
Pumps	C. A. Stillman	51,522
Pumps	J. A. Bloom	51,686
Pumps	N. Johnson	51,726
Pumps	R. A. McCauley	51,736
Pumps, Air	A. S. Lyman	46,122
Pumps, Air	J. Molyneux	47,243
Pumps, Air	G. M. Woodward	48,009
Pumps, Air	F. Ransom	49,301
Pumps, Air	J. H. Wilhelm	51,769
Pumps, Breast	C. H. Wilder	47,760
Pumps, Breast	L. O. Colvin	50,457
Pumps, Deep	J. J. G. Collins	51,148

Invention or Discovery.	Name of Patentee.	No.
Pumps, Force, Submerged	A. Balding	49,212
Pumps, Oil	W. H. Elliot	47,350
Pumps, Oil-well	J. B. Root	47,133
Pumps, Oil-well	H. Searl	48,983
Pumps, Packing for, Piston	D. B. Fuller	45,989
Pumps, Pneumatic	W. H. Guild	51,175
Pumps, Rotary	G. B. Hill	48,770
Pumps, Rotary	P. Umholtz	48,604
Pumps, Rotary	G. W. Heald and L. D. Cisco	48,938
Pumps, Rotary	O. Palmer	51,347
Pumps, Rotary	R. C. Grover and J. Nicholson	51,713
Pumps, Sand	O. B. Latham	51,730
Pumps, Sand, for artesian wells	T. J. Lovegrove	46,756
Pumps, Ship	J. Edson	49,393
Pumps, Ship	T. S. Spackman and N. Hand	51,094
Pumps, Ship, Working	A. Cain	45,973
Pumps, Steam	L. W. Turrell	46,036
Pumps, Steam	A. W. Todd	48,853
Pumps, Steam	J. B. Atwater	49,063
Pumps, Steam	M. Wilcox	49,461
Pumps, Steam	F. Brown	51,291
Pumps, Steam, Automatic	E. Thayer	47,051
Pumps, Submerged	J. H. Williamson	46,764
Pumps, Submerged	H. M. Stoker	48,219
Pumps, Submerged	H. M. Stoker	48,220
Pumps, Well, Deep	J. Old	48,089
Pumps, Well, Deep	J. Sheffield	48,105
Pumps, Well, Deep	N. Dodge	48,378
Pumps, Well, Deep	B. J. C. Howe	50,590
Pumps, Well, Deep	S. E. Hewes	50,932
Pumps, Well, Deep	R. Boeklen	51,007
Pumps, Wine	T. M. Fell	47,289
Pumps' filters	J. Christman	51,145
Pumps in deep wells, Elastic packing for the exterior of	J. Moulton	46,860
Pumps for deep wells	T. J. Lovegrove	51,602
Pump for oil wells	T. Rose	50,846
Pump for oil wells	J. B. Root	47,224
Pump and other oscillating rods, Protection for	L. Wilson	48,880
Pump and tubes for wells	J. H. Bump	51,136
Punch	M. J. Fitzpatrick and B. J. Baker	49,616
Punch, Centre	E. E. Safford and S. Sawyer	49,553
Punch, Centre	M. Bowker	50,442
Punch, Hand	W. Nash	45,738
Punch, Spring	P. Bauer	49,364
Punch, Paper collar button-hole	S. S. Stone	46,279
Punch, Self-centring	S. Z. Hall	48,018
Punch and die	W. K. Lewis	46,681
Punching	P. L. Weimer	50,754
Punching machine	J. Steadman	51,630
Purifiers and water-coolers	A. J. Gibson and G. Emerson	46,556
Q.		
Quartz, &c., Breaking	E. P. Gardiner	46,461
Quartz, Crushing	A. W. Hall and D. Bentley	46,561
Quartz crusher	H. Camp	45,698
Quartz crusher	P. G. Gardiner	46,462
Quartz crusher	P. G. Gardiner	46,789
Quartz crusher	G. K. Peterson	46,936
Quartz crusher	D. Sexton	49,796
Quartz crusher	M. B. Dodge	50,563
Quartz crushers	P. G. Gates and D. R. Fraser	50,573
Quartz crusher	A. Buchanan	50,683
Quartz crusher	J. D. Whelpley and J. J. Storer	50,975
Quartz crusher	A. C. Austin	51,537
Quartz crusher	W. W. Hanscom	51,586
Quartz crusher	W. B. Dodge	46,645
R.		
Rack, Clothes	J. O. Montigrani	49,779
Rack, Clothes	C. B. Crosby	51,149
Rack, Clothes or hat	C. Bradfield	46,751
Rack, Coat and hat	G. F. J. Colbourn	46,296
Rack, Coat or hat	S. Macferran and S. Ustick	46,528
Rack, Combination, for printers' use	R. Yeomans	50,650
Rack, Feed	J. M. Van Nest	47,472
Rack, Hay	A. Naramor	46,017
Rack, Hay	G. Baldwin	47,379
Rack, Hay, for wagons	W. M. Thomas	49,455
Rack, Sheep	B. Griffin	47,813
Rack, Sheep	J. P. Ray	48,093
Rack, Sheep	M. Barnard	48,641
Rack, Sheep	A. D. Stansbury	49,003
Rack, Sheep	C. H. Hicks	49,403
Rack, Sheep	G. J. Hendricks	49,520

Invention or Discovery.	Name of Patentee.	No.
Rack, Sheep	J. S. Beals	50,550
Radiators, Heat, for stoves	W. E. Rennolds	46,941
Radiators, Heat, for stove-pipes	N. F. Goodrich	50,069
Radiators for stoves	W. P. and H. A. Adams	46,765
Rafts, Cotton-bale	T. Byrne	51,140
Rails, Railroad	J. A. Dickson	49,864
Rails, Railroad	B. F. Farrar	49,742
Rails, Railroad	A. and R. J. B. Hamill	50,243
Rails, Railroad, Joints for	K. W. King and T. C. Hargrave	49,763
Rails, Railroad, Lock-joints for	A. Douglass	47,528
Rails, Railroad, Rolls for rolling	A. J. Gustin	50,816
Rails of railroads, Straightening	J. Johnson	47,208
Rail box for railroad	A. J. Warren	51,635
Rail joint, Railroad	G. M. Ramsay	46,388
Railroad	R. Montgomery	46,482
Railroad, Track cleaner for	G. C. Sharp	50,634
Railroad box rail	O. G. Warren	51,635
Railroad cars, for starting	T. R. Sinclaire	51,626
Railroad frogs	G. G. Hickman	48,400
Railroad rail joint	K. W. King and T. C. Hargrave	49,763
Railroad tracks, Preventing snowdrift on	L. D. Walrad	48,464
Railway	P. Osgood	48,976
Railway, Marine	W. F. Channing	46,878
Railway frogs	W. Wharton	48,859
Railway frogs	T. Sharts	49,162
Railway trains with water, Supplying	L. H. Lezott	50,013
Raisins, Removing seeds from	H. Locke	51,201
Rakes, Grain	E. G. Warner	48,606
Rakes, Harvester	J. H. Jones	49,530
Rakes, Harvester	W. F. Cochrane	50,066
Rakes, Harvester	J. Poulson, jr	50,159
Rakes, Harvester	J. M. Randle	50,388
Rakes, Harvester	J. Bacon	50,529
Rakes, Hay	T. Witmer	49,673
Rake, Hay, Horse	G. W. King	47,553
Rakes, Hay, Horse	H. Tunison	47,587
Rakes, Hay, Horse	J. Crelin	47,703
Rakes, Hay, Revolving	E. Calderwood	46,447
Rakes, Horse	J. C. Stoddard	45,769
Rakes, Horse	D. D. Gitt	45,920
Rakes, Horse	A. B. Sprout	45,942
Rakes, Horse	E. Huber	46,001
Rakes, Horse	E. C. Martin	46,009
Rakes, Horse	H. Albright	46,435
Rakes, Horse	J. Pennypacker	46,583
Rakes, Horse	G. E. Burt	46,776
Rakes, Horse	J. M. Jay	47,371
Rakes, Horse	P. S. Carver	47,519
Rakes, Horse	J. D. Jones	47,644
Rakes, Horse	J. Lacy	47,736
Rakes, Horse	O. E. Randall	47,857
Rakes, Horse	M. Smith	47,872
Rakes, Horse	D. Prest	47,980
Rakes, Horse	A. B. Sprout	48,109
Rakes, Horse	D. G. Hensey	48,179
Rakes, Horse	R. J. Robeson	48,629
Rakes, Horse	J. Hollingsworth	48,944
Rakes, Horse	S. M. Sherman	49,164
Rakes, Horse	F. Holden	49,269
Rakes, Horse	F. Seidle	49,926
Rakes, Horse	H. C. Whitney	50,060
Rakes, Horse	G. Palmer	50,269
Rakes, Horse	W. F. Johnston	50,363
Rakes, Horse	A. V. Rider	50,391
Rakes, Horse	C. W. Warner	50,525
Rakes, Horse	G. E. Burt	50,557
Rakes, Horse	A. C. Stone	50,853
Rakes, Horse	A. C. Stone	51,097
Rakes, Horse	D. G. Hussey	51,187
Rakes, Horse	S. Bingham	51,287
Rakes, Horse	W. King	51,322
Rakes, Horse	R. A. Graham	51,450
Rakes, Horse	D. P. Sharpe	51,486
Rakes, Horse	M. D. Wells	51,503
Rakes, Horse, and hay spreader, Combined	G. N. Palmer	51,473
Rake teeth, Horse	A. B. Sprout	49,800
Rakes for harvesters	M. A. Keller	46,565
Rakes for harvesters	M. J. and R. Case	49,976
Rakes for harvesters, Automatic	W. N. Whiteley, jr	49,669
Rakes and reels for harvesters, Combined	S. Johnson	46,300
Ram holder	S. J. Olmsted	48,090
Rammers for revolving fire-arms	F. D. Newbury	46,131
Range	E. Whiteley	50,977
Range, Cooking	C. J. Shephard	47,045

Invention or Discovery.	Name of Patentee.	No.
Range, Cooking	E. G. Niles	48,712
Range, Cooking	M. Pond	49,001
Ranges, Cooking	M. C. Hull	50,933
Ratchet brace	L. H. Olmsted	47,446
Ratchet and pawl, Automatic	O. Gilder	46,791
Ratchet or pawl, Feed wheels as substitutes for	O. C. Phelps	47,126
Reamer, Bung-hole	L. Gray	51,451
Reamer and drill for oil and other wells	J. Burns	51,138
Reapers, Binding attachments to	J. M. Ring	49,889
Reaping machine	D. Wolf	46,169
Reaping machine	H. W. Bill	46,630
Reaping machine	J. O. Brown, A. Ingham, and T. T. Lomont.	49,077
Reaping machine	H. Fisher	49,194
Reaping machine, Binding attachment for	J. Behel	49,970
Reaping machine, Binding attachment to	J. S. Jones	48,690
Reaping machines, Guard finger for	A. Winterburn	48,473
Reaping and mowing machines	T. Swain	45,798
Reaping and mowing machines	O. T. Holbrook	45,827
Reaping and mowing machine	T. Welch	49,184
Reed, Expansible, for warp dressing and weaving	A. J. Nichols	46,381
Reed, Fishing-line	W. M. Stewart	49,663
Reels for harvester	E. P. Russell	47,338
Reflector, Fastening for, Adjustable	S. D. Ingram	49,525
Reflector for lamp and gas burners	J. Redding	51,344
Refrigerator	T. S. Blake and O. E. Mosher	45,690
Refrigerator	O. E. Mosher	47,123
Refrigerator	L. D. Bunn	47,617
Refrigerator	A. Forbes and J. Macbeth	51,035
Refrigerators, packing and preserving houses, and other similar structures, Cooling.	D. E. Somes	46,595
Refrigerator for preserving articles of food	D. E. Somes	46,277
Refrigerator or house for preserving animal and vegetable substances.	J. H. Fisher	49,098
Refrigerators and condensers	W. A. Lighthall	46,368
Registers, Grain	J. T. Wiley	49,817
Registers, Passenger	E. Hackett	46,663
Registers for counting revolutions	V. Girond	48,927
Register for libraries	W. T. Ray	49,788
Register for street cars	J. B. Greenhut	51,453
Register and summer piece, Combined	S. S. Bent	45,688
Registering the number of shoes soled by a sewing machine	A. J. Tewksbury	50,642
Regulators, Gas	C. M. Cresson	47,189
Regulators, Electro-magnetic	F. F. A. Achard	49,842
Regulators, Valve, Safety	P. Riordan	46,142
Regulators, Water	J. W. Bishop	47,184
Regulators for the wicks of lanterns	H. W. Bleyer	48,254
Rein-holder	T. L. Tripp	49,806
Rein-guards for vehicles	C. B. Guy	51,041
Rein and back-strap holder, Combined	J. Bullene, jr	51,420
Rendering apparatus	C. E. Gray	46,793
Reservoir for beer, wine, &c	M. Tschirgi	47,347
Reservoir for compressed air	L. Ransom	49,787
Retorts, Clay, Decarbonizing	G. W. Edge	49,989
Retorts, Gas or other	J. Chilcott	45,908
Retorts, Gas, Head-necks and connections of	J. Chilcott	49,231
Retorts, Gas, Incrustation from, Removing	A. J. White	49,329
Retorts for distilling petroleum	G. H. S. Duffus	46,088
Retorts for distilling petroleum	G. H. S. Duffus	46,089
Retorts for distilling petroleum	G. H. S. Duffus	46,090
Ribbons, tapes, and threads for use, Arranging	M. B. Westhead	50,318
Ribbons for hand-stamps, Composition for preparing	H. Holt	47,494
Rice, Hulling, cleaning, and polishing	C. E. Rowan	46,708
Rigging standing, Attaching shear-pole to	E. Smith	50,046
Ring, Clinch	J. A. Coleman	48,157
Ring, Cutting, from iron	C. H. Bassett	49,191
Ring, Strap-clamp	J. Cogan	50,688
Ripping sutures in cloth	F. B. Converse	48,662
Rivets	J. N. Dennison	46,297
Rivets	J. W. Smith	46,504
Road-making device	T. T. Barber	49,693
Rock crusher	S. F. Hodge	48,813
Rock-drill apparatus	W. S. Fickett	47,290
Rockets, Sky	J. W. Hadfield	51,176
Rods, Pump and other oscillating, Protection for	L. Wilson	48,880
Rolls, Drawing-frame	J. M. Stone	47,667
Rolls for machines for preparing fibrous material for spinning, &c.	D. Read	48,134
Rolls for rolling railroad rails	A. J. Gustin	50,816
Roller, Covering, for wringers	R. B. Hugunin	47,827
Roller, Covering with cloth or canvas, Clamp for	H. H. Holly	51,182
Roller, cultivator, and seeder, Combined	J. P. Long	46,480
Roller, Dough	D. B. Baker	51,539

Invention or Discovery.	Name of Patentee.	No.
Roller, Fluted	W. Weild	50,997
Rollers, Guide for	H. Waters	48,466
Rollers, Leather	D. H. Priest	50,079
Rollers, Mill	W. S. Seymour	50,281
Roller, plaster, and seed sower, Combined	H. S. Babcock and S. H. Jenks	45,686
Roller, Printers', Refining the surface of	C. Sentell	48,453
Roller, Seeding machine and drag, Combined	W. H. Hartman	48,063
Roller, Spring	J. and G. S. Goodspeed	46,896
Roller, Washing	H. L. Meservy	49,288
Roller, Washing	J. E. Atwood	49,359
Roller-cleat for trunks	J. A. Lieb and J. Schmadel	47,114
Roller crushing machine	A. Hitchcock	50,247
Roller for cotton-gins	I. F. Brown	45,695
Roller for trunks	J. Schmadel and J. A. Lieb	48,214
Roller of washing machines, Covering	R. B. Hugunin	50,712
Roller and corn-planter, Combined	P. Conrad	46,083
Roller and drag, and seeding machine, Combined	W. H. Hartman and S. Sheller	45,825
Roller and harrow, Combined	W. H. Converse	47,090
Roller and harrow, Combined	W. R. Mears	50,259
Rolling apparatus	E. Wassell	48,496
Rolling irregular forms	J. Dodge	48,915
Rolling-pin	C. E. Phillips	47,979
Rolling-pin	G. L. Witsil	50,528
Rolling-pin and cake-cutter	I. N. Pyle	50,732
Rolling tapering bars or plates of metal	J. Holmes	48,868
Roofs, the decks of vessels, &c., Applying covering to	J. Hall	48,060
Roofing	J. W. Kingman	45,723
Roofing, Mastic, Preparing	R. Skinner, G. Duncan, and C. Merighi.	50,177
Roofing, tubing, tanks, wainscotting boats and other structures, Material for.	J. K. Mayo	51,735
Roofing bracket	C. A. Kirkpatrick	48,818
Roofing composition	W. L. Potter	46,495
Roofing composition	N. Groh	47,416
Roofing composition	L. Groneweg, J. H. Pulte, and C. F. Jones.	51,309
Roofing material, Preparing	A. Robinson	48,311
Rooms or buildings for preservation of food and for other purposes.	D. E. Somes	46,276
Root cultivator and weeder	C. Jarvis	45,831
Ropes, cards, &c., Making	J. O. Matthias	46,057
Rosin, oil, spirits of turpentine, and other products from pine wood, Obtaining.	A. H. Emery	46,092
Rosin, Substitute for	D. T. Wilson	48,634
Roving frames	T. Mayor	46,530
Rowlocks	J. W. Norcross	46,132
Rowlocks	J. W. Norcross	46,816
Rowlocks	J. W. Norcross	48,975
Rowlocks	I. C. and F. W. Flagg	49,395
Rowlocks	P. W. Neefus	50,264
Rowlocks	M. L. Babb	50,547
Rowlocks	I. C. and F. W. Flagg	51,032
Rubber, &c., Cutting	E. Hubner	47,421
Rubber, Hand	D. D. Parmelee	48,993
Rubber, Hard, Article made of	G. S. Rice	47,457
Rubber, Hard, or vulcanite	D. D. Parmelee	48,992
Rubber, Moulding	J. R. Moffitt	51,207
Rubber, Packing, for dental purposes	F. C. Brown	49,969
Rubber, White	F. Marquard	51,331
Rubber, White	F. Marquard	51,332
Rubber rolls to shafts, Uniting	W. H. Grant	46,464
Rubber for dental purposes	I. Woolworth	51,642
Rudder	T. G. Crosby	45,959
Rudder	J. Higbee	46,753
Rudder	N. D. Le Pelley	46,807
Rudder	J. Higbee	48,940
Rudder with corrugated surfaces	S. J. Seely	46,147
Rules, Carpenters'	B. G. Martin	49,037
Rules, Folding, Joint of	J. A. Traut	48,327
Rules, gauges, and calipers, Connecting	N. H. Bundy	49,337
Rules, Gear cutting	C. B. Long	47,436
Rules, Square, cutter, blotter, weight, and paper, Combination of.	A. H. Trego	50,404
Rulers	S. L. Simpson	48,454
Rulers, Metallic	D. Munson	51,609
Rulers, Parallel	E. C. Gillette	46,348
Rulers, Parallel	W. L. Woods	50,980
Ruler and paper cutter	J. Woodward	48,756
Ruling and printing machines, Combination of	H. J. Hewett	50,475

S.

Saccharine liquids, Boiling and evaporating	D. M. Cook	48,522
Saccharine liquids, Evaporating	B. Brown	46,069

Invention or Discovery.	Name of Patentee.	No.
Saccharine solution and sirups, Treating	E. P. Eastwick	47,402
Sacks, Catamenial	E. L. Perry	49,915
Sacks, Flour	J. M. Hurd	51,722
Saddles, Harness	O. B. North	47,244
Saddles, Harness	P. Bôttyer	47,276
Saddles, Riding	G. H. Meeker	47,771
Saddle-tree	A. Koehler	47,960
Saddle-tree, Harness	S. E. Tompkins	45,880
Saddle-tree, Harness	O. B. North	46,489
Saddle valise	R. McMurray and J. S. Topham	47,028
Sad-iron	R. Drake	48,129
Sad-iron fixture	D. L. Shaw	49,446
Safes	M. Briggs	46,634
Safes, Fire	J. Farrel	46,228
Safes, Money	B. Cole	46,779
Safeguard for protecting pottery ware	B. Jackson	46,109
Sail clutch	E. F. Sawyer	48,103
Sails, Fore and aft, Reefing	J. Hart	51,529
Sails, Vessel, Lazy jack for	D. R. Arnold	47,178
Salinometers	P. B. O'Neill	50,380
Salts of chromium	B. Margulies	49,682
Salve	W. Slape	49,198
Sand, &c., Pulverizing	J. G. Savage	46,713
Sand distributor for railway cars	C. M. Bromwich	51,646
Sand-paper holders	J. and N. W. Redding	46,702
Sandal, ice	T. J. Linton	46,682
Sandal, ice	E. Fitzki	47,006
Sap spile	M. Hays	45,996
Sash, Greenhouse	I. F. Hersam	51,717
Sash, Window, Metallic	C. Neer	46,305
Sash, Window, Retainer for	J. H. Weeks	46,512
Sash, Window, Supporter for	J. G. Perry	45,747
Sash, Window, Suspenders for	J. H. Williams	45,748
Sash fastener	W. C. McGill	46,481
Sash fastener	A. Westcott	48,856
Sash fastener	G. Leining	48,960
Sash fastener	A. H. Howe	49,159
Sash fastener	J. B. Masser	51,469
Sash fastening	R. Lee	47,962
Sash fastening	S. M. Richards	49,592
Sash fastening	O. S. Judd	50,136
Sash supporter	W. C. Fisher	47,709
Sash supporter	A. M. Sawyer	49,442
Sash supporter	W. C. McGill	49,541
Sash supporter	W. Conner	50,098
Sash supporter	E. A. Campbell	50,332
Sash supporters, Window	H. F. Jenks	46,472
Sash for roofs of hot-houses	J. N. Woodward and W. Holden	48,126
Sash to window cords, Attaching	H. J. Adams	49,489
Sash and window frame	C. B. Shaw	50,393
Sausage filler	J. G. Perry	45,743
Sausage filler	O. W. Stow	48,598
Saws	R. Cromelien	46,996
Saws	E. S. Drake	47,255
Saws	A. Dawes	48,376
Saws	J. S. and C. N. Brown	50,553
Saws	H. P. Dillingham	51,385
Saws, Circular, Centring	W. T. and L. H. Rand	51,478
Saws, Circular, Hanging	W. R. Close	47,597
Saws, Circular, on their arbors, Adjusting	J. Barnard	46,325
Saws, Cross-cut, Attaching handles to	C. Disston	45,980
Saws, Cross-cut, Attaching to their handles	D. Bearly	50,676
Saws, files, &c., Tempering	J. Small	49,451
Saws, Grinding and polishing	W. J. Lippincott	50,606
Saws, Hand	D. Welch and W. W. Armington	50,667
Saws, Pitman for	H. C. Ellinwood	51,029
Saws, Sharpening	J. F. Tudor	49,014
Saws, Sharpening	R. Sparks	46,951
Saws, Sharpening	C. P. Frazer	51,168
Saws, Scroll	W. H, Doane	45,981
Saws, Scroll	A. D. Campbell	51,105
Saws, Scroll	S. Harrington	51,312
Saws, Teeth for	J. E. Emerson	49,868
Saw-filing machines	S. P. Ochiltree and E. C. Johnson	47,683
Saw frames, Buck	W. Morehouse	47,032
Saw frames, Wood	W. Morehouse	46,013
Saw-grinding machine	J. G. Baker	46,843
Saw gummer	A. K. Foster	48,546
Saw-set	J. Buser	47,187
Saw-set	A. R. Fenner	50,463
Saw-setting machine	C. Disston	47,806
Sawing, Working power for	A. West	49,575
Sawing machines	H. J. Miller	45,847
Sawing machines	J. W. Moyer	46,105

Invention or Discovery.	Name of Patentee.	No.
Sawing machines	C. B. Rogers	46, 425
Sawing machine	C. P. Wiggins	46, 428
Sawing machine	J. Frey	46, 460
Sawing machines	E. Tolman	46, 833
Sawing machine	A. Beekman	46, 966
Sawing machines	V. H. Buschmann	47, 279
Sawing machines	W. Ennis and H. J. Bosworth	47, 404
Sawing machines	A. E. and J. V. Warner	48, 001
Sawing machines	M. Newman	48, 875
Sawing machines	G. Westinghouse	48, 857
Sawing machine	C. P. Wiggins	48, 879
Sawing machines	W. A. L. Kirk	49, 279
Sawing machine	N. B. Baldwin	49, 692
Sawing machines	F. W. Robinson	49, 791
Sawing machines	T. Harper	50, 119
Sawing machines	O. A. White and J. W. Bostwick	50, 292
Sawing machines	T. Reeves	50, 627
Sawing machines, Horse-power for	O. A. White and J. W. Bostwick	49, 944
Sawing machines, Scroll	A. A. Hoffman	46, 106
Sawing machines, Scroll	L. Wright	47, 777
Sawing machines, Scroll	W. H. Doane	48, 161
Sawing machines, Scroll	J. A. Tapley	51, 761
Sawing machine, Shingle	C. L. Pierce	47, 449
Sawing and boring machines	B. Klahr	46, 113
Scaffold	H. Littlefield	49, 283
Scalds and burns, Curing	L. Maxwell	46, 570
Scale	J. Sangster	51, 357
Scale, Draughting	J. Lyman	46, 256
Scale, Draughting	S. H. Wiley	51, 375
Scale, Platform	J. H. Conklin	47, 165
Scale, Platform	E. Sampson	50, 537
Scale, Portable	H. Maranville	50, 254
Scale board and match splints, Cutting	J. K. Mayo	50, 833
Scale from boilers, Compound for removing	A. B. Auer	47, 914
Scale from boilers, Removing, Composition for	J. Buzby	47, 188
Scale from boiler flues, Removing	P. E. Garvin	49, 255
Scale and chair, Child's exercising	T. Shedd and F. Glockner	51, 091
Scaling tubes to boilers, Tools for	J. Daley and J. H. Marvill	46, 339
Scissors	W. Howard	50, 589
Scissor sharpener	T. K. Knapp	49, 764
Scissor sharpener	J. J. Russ	51, 483
Scoop and flour sifter	G. S. Wendell	51, 525
Scraper, Box, ship, or mast	C. H. Harris	48, 554
Scraper, canal	T. Miller	46, 128
Scrapers, Grading	C. Evans and W. C. Bartlett	47, 531
Scraper, Gun, Adjustable	E. L. Pratt	46, 140
Scraper, Kettle	E. C. Fuller	50, 112
Scraper, Road	W. Patterson	47, 977
Scraper, Road	E. A. Field	48, 920
Scraper, Road	W. W. Johnson	48, 951
Scraper for cleaning gun barrels	E. L. Pratt	47, 260
Scraping roads and cleaning gutters	N. Potter	48, 591
Screen, Ash, and coal scuttle, Combined	A. F. Carlin and L. Rockwell	50, 685
Screen, Coal	A. M. Olds	46, 019
Screen, Coal	J. A. Robinson	47, 041
Screen, Coal	W. Sparks	49, 932
Screen, Fire	H. P. Gengembre	49, 622
Screen, Grain	C. T. and J. B. Messinger	49, 429
Screws	H. A. Harvey	47, 548
Screws	H. A. Harvey	47, 549
Screws, Brass, Brazing, to iron pipes	W. B. Scaife	46, 395
Screws, cutting	J. A. Merriam	49, 133
Screws, Iron, Tinning and plating	D. and H. E. Fowler	49, 586
Screws, Pressing and shaping	T. Welham	47, 236
Screws, Tap, Reversing the motion of	L. Yale, jr	48, 476
Screws, Threading	H. A. Harvey	51, 179
Screws, Wood, Shaving and nicking	D. M. Robertson and J. A. Birdwell	47, 861
Screw-cutting machine	S. W. Goodyear	46, 846
Screw-cutting machine	J. R. Brown	51, 257
Screwdrivers	W. G. A. Bonwill	50, 328
Screwdrivers	J. S. McCurdy	50, 021
Screwdrivers, Manufacturing	G. Parr	45, 854
Screwdriver and tweezer	D. F. Hartford	47, 102
Screw-nicking machine	J. A. Bidwell	45, 946
Screw plates	J. Jennings and G. C. Sweet	46, 676
Screw propeller blades	C. C. Gates	51, 446
Screw steam-valve cocks	S. D. Fales	47, 097
Screw thread-cutting tool	C. Dreher	51, 808
Screw for fastening railroad rails	A. Arnold	46, 842
Scrubbing knuckle-shield	C. A. Moore	49, 291
Scuttle, Coal	S. B. Sexton	46, 148
Scuttle, Coal	T. Smith	50, 744
Scuttle, Coal	H. S. Pratt	50, 953
Scuttle, Coal	M. L. Byron	51, 139

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Scythes, Blanks for	H. Waters	47, 589
Scythes, Fastening for	W. C. Barker	49, 822
Scythe fastening	M. R. Flanders	46, 458
Scythe snaths	S. B. Batchelor	50, 891
Scythe snaths, Bending	A. S. Philbrook	50, 272
Seats, beds, &c., Elastic supports for	J. Perry	50, 840
Seats, Car	E. F. Shoenberger	45, 759
Seats, Car	E. Lockwood and G. W. Pitman	48, 191
Seats, Car, Railroad head rest for	N. Gates	48, 270
Seats, Car, Railroad head rest for	W. R. Phelps	48, 586
Seats, Car, Railway	G. W. Sayre	47, 342
Seats, Chair	E. Ransom	50, 955
Seats, Folding, for wheel vehicles	H. A. Gilbertson	49, 872
Seats, Spring, for wagons	T. J. Alexander	50, 785
Seats, Wagon, Turnout	G. Gregory	51, 780
Seat for drivers and conductors of street cars	T. C. Hambly	50, 819
Seat for water-closets	J. N. Davis	49, 731
Seat for water-closets	E. Woodruff	50, 064
Seat and desk, School	W. Disbrow	47, 099
Seat and fountain, Combined rotating, for barber shop	J. Meyer	49, 533
Seat and school desk	J. P. Allen	46, 980
Seat and valise, Combined	S. P. Holden	46, 187
Sediment extractor for steam boilers	E. Thayer	47, 232
Seed, Cotton, Cleaning	J. G. Page	51, 745
Seed separator, Grain and grass	J. B. Wallace	48, 329
Seed sower	J. M. Harshbarger	45, 923
Seed sower and stalk cutter, Combined	B. A. Grant	49, 997
Seed and plaster sower and roller combined	H. S. Babcock and S. H. Jenks	45, 686
Seeder, Broadcast	J. Davis	50, 916
Seeder, cultivator, and potato planter, Combined	B. F. Field	50, 202
Seeder, cultivator, and roller, Combined	J. P. Long	46, 480
Seeder and cultivator combined	C. Norwood	47, 975
Seeder and cultivator combined	S. Keller	48, 871
Seeder and harrow	D. L. and J. M. Barlow	45, 903
Seeding machines	J. M. Follett	45, 707
Seeding machines	W. H. Crichton	45, 817
Seeding machine	W. Saxton	46, 271
Seeding machine	C. Foster	46, 344
Seeding machine	S. D. Cook and H. J. Webb	46, 544
Seeding machine	W. N. Bates	46, 626
Seeding machine	M. S. and J. R. Cadwell	46, 877
Seeding machine	C. H. Eggleston	46, 889
Seeding machine	J. Fowler and F. M. Bacon	47, 009
Seeding machine	C. C. Carter	47, 518
Seeding machine	S. M. Prentice	47, 855
Seeding machine	C. Krogh	48, 566
Seeding machine	R. Burns	48, 655
Seeding machine	E. D. and O. B. Reynolds	49, 302
Seeding machine	B. Wieland	49, 460
Seeding machine	J. Shafer	49, 557
Seeding machine	M. Clark	49, 720
Seeding machine	H. D. Dunn	49, 730
Seeding machine	H. Williams	49, 818
Seeding machine	B. F. Field	50, 201
Seeding machine	W. H. Hartman	51, 178
Seeding machine	J. B. H. Whiting	51, 768
Seeding machine, Attaching drill teeth to	J. H. Thomas and P. P. Mast	46, 732
Seeding machine, Broadcast	G. W. Warren	45, 775
Seeding machine, Broadcast	E. S. Jewett	48, 949
Seeding machine and cultivator	T. A. Gale	48, 269
Seeding machine and cultivator, Combined	O. M. Pond	48, 590
Seeding machine, roller, and drag, Combined	W. H. Hartman and S. Sheller	45, 825
Seeding machine, roller, and drag, Combined	W. H. Hartman	48, 063
Self-inflator for raising sunken vessels, &c	T. P. Edson	48, 539
Separator, Grain and grass seed	J. B. Wallace	48, 329
Sewing machine	W. Weitling	45, 777
Sewing machine	C. Cadwell	45, 972
Sewing machine	J. W. Bartlett	46, 064
Sewing machine	J. S. McCurdy	46, 303
Sewing machine	M. J. Stein	47, 666
Sewing machine	G. Rehfuss	47, 905
Sewing machine	A. Wittneben	48, 007
Sewing machine	L. Planer	48, 204
Sewing machine	J. J. Sibley	48, 248
Sewing machine	J. McClosky	48, 345
Sewing machine	E. F. Bradford and L. L. Barber	48, 511
Sewing machine	J. Zuckerman	49, 023
Sewing machine	T. J. Halligan	49, 262
Sewing machine	J. L. Frey	49, 745
Sewing machine	J. N. Tarbox	49, 803
Sewing machine	C. Hale	50, 117
Sewing machine	L. Planer	50, 157
Sewing machine	T. D. Ballou	50, 297
Sewing machine	J. Chilcott	50, 451

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Sewing machine	W. Hart	50,469
Sewing machine	J. Keats and W. Stephens	50,995
Sewing machine	G. Rehfuss	51,086
Sewing machines	H. Dunham, jr	51,157
Sewing machine	J. R. Logan	51,601
Sewing machine, Adjusting the driving wheel of	N. Niederpruem	47,560
Sewing machine, Automatic fan for	T. R. Lovett	51,202
Sewing machine, Binding attachment for	J. S. Steiner	46,722
Sewing machine, Binding guides for	C. Marsh	49,036
Sewing machines, Box-plaiting attachment for	A. Hecht	50,473
Sewing machines, Braiding guides for	L. Planer	47,171
Sewing machine, Button-hole	D. W. G. Humphrey	49,627
Sewing machine, Button-hole	D. W. G. Humphrey	50,253
Sewing machine, Button-hole	E. Cajar	50,299
Sewing machine, Button-hole	W. B. Bartram	50,870
Sewing machine, Carriage and caster for	N. D. Stoops	48,852
Sewing machine, Carrying and operating shuttle in	J. Wensley	47,673
Sewing machine, Caster for	N. D. Stoops	50,402
Sewing machines, Cloth guide for	G. F. Clemens	48,369
Sewing machine, Cloth guide for	A. Huston	49,031
Sewing machine, Cloth guide for	F. Zuchetti	51,645
Sewing machines, Clutch pulley for driving	P. Rodier	48,840
Sewing machine, Controlling motion of	A. Buchanan	51,012
Sewing machines, Controlling the spool thread in	H. E. Bodwell, jr	51,544
Sewing machines, Corders for	J. W. Brady	49,968
Sewing machine, Delivery of thread from shuttles and spools of	W. Weitling	46,513
Sewing machines, Embroidering attachment to	M. W. Stephens	51,239
Sewing machines, Feed device for	J. Bolton and J. B. Secor	49,907
Sewing machines, Feed wheels for	L. Plater	48,205
Sewing machine, Feed wheels for	L. Plater	48,206
Sewing machine, Glass presser-feet of	R. E. Peterson	47,978
Sewing machine, Guides for	G. W. Harrington	49,588
Sewing machine, Guide for	A. M. Smith	50,395
Sewing machine, Guides for	A. Warth	51,247
Sewing machine, Guide and tuck-marker for	F. H. Brown	51,547
Sewing machine, Hemmers for	H. Gœbel	47,632
Sewing machine, Hemming gauge for	W. Gaskill	46,790
Sewing machine, Marking attachment for	S. Berrett	50,271
Sewing machine, Ruffling device for	L. C. Riggs	50,164
Sewing machine, Shuttle for	V. Cutter	49,092
Sewing machine, Shuttle drivers for	V. Cutter	49,091
Sewing machine, Thread-tension device for	J. L. Otis	51,346
Sewing machine, Thread-waxing attachment for	J. S. Dawley and J. Bloeker	50,917
Sewing machine, Thread-waxing device for	H. P. Aldrich	47,912
Sewing machine, Thread-motion for	M. M. Barnes	51,541
Sewing machine, Tuck-creasing device for	J. Bolton	46,871
Sewing machine, Waxed-thread	H. P. Aldrich	47,911
Sewing machine, Waxed-thread chain-stitch	E. E. Bean	51,383
Sewing machine bobbin, Winding	A. W. Todd	46,955
Sewing machine shuttles	J. S. McCurdy	49,904
Sewing machine shuttles, Adjustable tension device for	F. Schenkl	47,462
Sewing machine stitch	C. Param	46,133
Sewing machine stitch	J. J. Libbey	49,837
Sewing machine for making band ruffling	T. Robjohn	46,424
Sewing machine for making ruffled fabrics	C. O. Crosby	50,225
Sewing machine for working button holes, &c	J. Emerson	50,989
Sewing machinery	T. Lamb and J. Allen	49,421
Sextants	P. M. A. Laurent	47,778
Shade, Lamp	M. J. Wellman and J. J. Greenough	46,600
Shade, Lamp	H. Zahn	46,748
Shade, Lamp	C. St. John	48,632
Shade, Lamp	C. St. John	50,509
Shade, Lamp, Clasp for	C. Reichmann	49,921
Shade, Window	G. L. Kelby	47,734
Shade, Window	J. W. Ward and S. D. Wilson	51,501
Shade, Window, Adjuster for	E. T. Higham	46,050
Shade-holder for lamps	C. St. John	46,534
Shade-holder for lamps	L. J. Atwood	47,913
Shafting	F. P. Peregoy	47,854
Shafting, Squaring the ends of, Tool for	L. Bronson	51,133
Shafting, Universal	T. Welham	46,166
Shank-cutting machine	S. D. Tripp	49,456
Shank laster	J. and A. B. Cain	48,052
Sharpener and fork, Combined	F. C. Beach	51,285
Shears	G. Carter	47,250
Shears, Cutting and grasping	S. W. Valentine	49,178
Shears, Hand, or nippers	T. Wallis and T. Witbeck	46,960
Shears, Pruning	J. Evans	48,803
Shear poles to standing riggings, Attaching	E. Smith	50,046
Shears for cutting iron bolts	G. W. Hyatt	47,832
Shears for cutting metal	J. Hornig	46,237
Shears for cutting metal	H. Barth	50,325
Shears for cutting paper	C. Brombacher	48,650
Shears for marking cattle	S. D. Baldwin	47,785

Invention or Discovery.	Name of Patentee.	No.
Sheep, Holding, while being sheared	M. K. and L. P. Lewis	49, 636
Sheep, Shearing	M. C. Davis	45, 703
Sheep chair	O. Barker and G. E. Blakelee	49, 067
Shelf, Folding	G. W. Gillespie	51, 583
Shells, Explosive	E. Estabrook	45, 985
Shells, Explosive	B. B. Hotchkiss	47, 544
Shells, Explosive	H. W. Libbey	47, 651
Shells, Explosive	L. E. Williams	48, 005
Shells, Explosive	J. H. Hiscock	50, 535
Shells, Explosive, Compound	H. Barton	48, 642
Shells, Explosive, Submarine	W. W. W. Wood and J. L. Lay	47, 776
Shells, Explosive, Timing by clockwork	F. Toggenburger	47, 586
Shells, Explosive, for ordnance	S. Wells	49, 326
Shells, Incendiary	W. W. Hubbel	50, 711
Shell and shot, Casting	T. J. Lovegrove	48, 022
Shells or torpedoes, Submarine, Operating	W. W. W. Wood and J. L. Lay	46, 853
Shields for breast strap	H. F. Willison	47, 485
Shifting gear	C. D. Rogers	45, 864
Shingles, Measuring and counting	M. Bonney	47, 697
Shingle machine	E. R. Morrison	46, 129
Shingle machine	I. N. Voris	47, 672
Shingle machine	S. E. Anthony	48, 885
Shingle machine	G. Challoner	49, 228
Shingle machine	J. A. Burnap and J. H. Melick	50, 900
Shingle machine	S. T. Sanford	51, 484
Shingle sawing machine	C. L. Pierce	47, 449
Ships, Iron	T. B. Daft	50, 767
Ships, Ventilating	O. D. Wells	51, 504
Ships, Stem and dead wood of, Framing	J. W. Griffiths	51, 307
Ship building	J. W. Griffiths	51, 308
Ships' bottom, Coating, Composition for	C. M. Spooner	49, 567
Ships' galley	W. Young	46, 313
Ships' lights, Closing	E. S. Hidden	51, 718
Ships and other vessels, Cooling and ventilating	D. E. Somes	46, 593
Ships and other vessels, Cooling and ventilating	D. E. Somes	48, 457
Ships of war	C. Slater	47, 463
Shirt bosoms	J. Neil	46, 487
Shirt bosoms	D. T. French	49, 027
Shirt bosoms, Paper	W. E. Lockwood	46, 567
Shirt bosoms, Paper	J. B. Gardiner	49, 747
Shirt bosoms, Metallic	L. Billou	49, 703
Shirt and braces, Combined	W. H. Towers	50, 289
Shoes	J. B. Johnson	46, 299
Shoes	D. Brown and W. S. Wooton	49, 076
Shoes	J. L. Joyce	49, 415
Shoes	F. Weed	50, 057
Shoes, Brake	J. Christy	49, 948
Shoes, Fastening for	C. Burchardt	49, 854
Shoes, Sewed	H. Dunham, jr	50, 462
Shoes, Sewed, Machine	E. Thompson and R. Mars	48, 113
Shoes, Turned	G. McKay and L. R. Blake	47, 770
Shoe-edge burnishing machine	N. S. Thompson	50, 856
Shoe fastening	C. B. Hatfield	47, 356
Shoe fastening	J. Adams	49, 061
Shoe lacing	M. Bray	47, 513
Shoe lacing	T. J. Kelleher	50, 008
Shoe lacings, Knitting	N. W. Westcott and H. G. Walcott	48, 878
Shoe-shanking machine	W. H. Kimball	46, 805
Shoe string	W. H. Towers	46, 408
Shoe soles, Voltaic	T. Hall	46, 234
Shoes soled by sewing machines, Registering the number of	A. J. Tewksbury	50, 642
Shoes and soles, Heating	F. Winslow	50, 866
Shot and shell, Casting	T. G. Lovegrove	48, 022
Shoulder-strap slide	G. D. Kellogg	47, 958
Shovels, Grain	E. P. Williams	49, 330
Shovels, Sifting	J. P. Buckland	49, 370
Shovels, Sifting, Ash	A. M. Olds	49, 781
Shovels, Snow	D. M. Thayer	50, 050
Shovel and ash sifter, Combined	R. Schaap, jr	46, 946
Show cards, Ornamenting	F. B. Scott	49, 444
Show cases for cigars and tobacco	C. E. Brown	48, 152
Shutters, Window	W. H. Kennard, jr	49, 632
Shutter case	J. Ingram	49, 411
Shutter fastening	J. Frick	47, 711
Shuttles, Bobbin, Securing	S. C. Mendenhall	49, 643
Shuttles, Loom, Operating	D. Bickford	51, 006
Shuttles, Tatting	J. S. Warner	50, 970
Shuttle hinge and fastening	W. S. Gerard	50, 239
Shuttles for looms	W. Wilder	46, 040
Shuttles and spools of sewing machines, Delivery of thread from.	W. Weitling	46, 513
Shutters, Closing and opening	G. G. Morton and E. Lamasure	40, 909
Sieve	S. V. Gifford	50, 465
Sieve for separating oats from wheat	J. H. Mather	51, 334

Invention or Discovery.	Name of Patentee.	No.
Sifter, Ash	C. F. Miller	48,196
Sifter, Ash	J. H. O'Neil	48,429
Sifter, Ash, and shovel combined	R. Schaap, jr	46,946
Sifter, Coal	J. Martin	47,768
Sifter, Coal, Portable gravitating	W. E. Brown	46,070
Sifter, Coal and ash	A. E. and J. B. Blood	46,293
Sifter, Coal and ash	J. L. Gilbert	46,894
Sifter, Coal and ash	S. C. Maine	48,293
Sifter, Flour	H. Tilden	47,056
Sifter, Flour	W. J. Johnson	47,731
Sifter, Flour	H. Tilden	47,756
Sifter, Flour	D. C. Colby	48,156
Sifter, Flour	J. H. Littlefield	48,189
Sifter, Flour	H. Tilden	48,223
Sifter, Flour	D. C. Colby	48,520
Sifter, Flour	H. Locke	48,571
Sifter, Flour	S. C. Maine	48,572
Sifter, Flour	H. Fairbanks	48,668
Sifter, Flour	J. Earnshaw	48,916
Sifter, Flour	G. W. Tileston	49,200
Sifter, Flour	H. W. Sargent	49,441
Sifter, Flour	N. W. Foye	49,870
Sifter, Flour	J. Myers, jr	50,025
Sifter, Flour	L. W. Turner	50,054
Sifter, Flour	E. L. Pratt	50,160
Sifter, Flour	C. Burnham	50,447
Sifter, Flour	E. Spencer	50,640
Sifter, Flour	N. Rice	50,734
Sifter, Flour	Z. and A. F. Saunders	50,847
Sifter, Flour	H. L. Meservey	51,657
Sifter, Flour, and sauce	J. Wells	51,766
Sifter, Flour, and scoop	G. S. Wendell	51,525
Sight-base, Rear, for fire-arms	F. W. Howe	46,000
Sight for ordnance	J. Bradey	46,329
Sign, Illuminated	J. N. Tarbox	47,669
Sign, Transparent, for street lamps	F. L. Hagadorn	46,897
Signal	A. G. Myer	50,946
Signal, Low-water	T. Shaw	48,730
Signals, Railroad	G. Natcher	48,085
Signals, Railroad	A. Pell	50,382
Signal boxes for fire alarms	C. E. Carpenter	46,542
Signal frames	W. A. Sprague	47,230
Signal towers	B. P. Lamason and S. D. King	47,026
Silicates, Alkaline, Potash or soda from, Liberating	F. O. Ward	46,979
Silk and other threads, Cleaning and finishing	T. Kohn	49,280
Silver and gold, Amalgamating	A. B. Crosby	46,546
Silver and gold, Amalgamating	H. Bolthoff	46,632
Silver and gold, Amalgamating	J. W. Wyckoff	50,296
Silver and gold, Separating from mineral and earthy substances	G. N. Jennings	46,909
Singletrees, Blank clips for	M. Loughran	48,699
Sinkers, Fishing line	E. F. Decker	46,453
Sizing, Surface, Wadding, &c., Machine for	S. Baxendale	46,065
Skates	W. Race	46,497
Skates	T. Van Wagoner	46,836
Skates	W. Hawkins	47,018
Skates	D. S. Brigham	47,185
Skates	J. P. Farmer	47,287
Skates	E. Murray	47,682
Skates	O. W. Taft	48,601
Skates	E. Johnson, jr	48,950
Skates	D. J. Farmer	49,741
Skates	E. Murray	49,832
Skates	S. H. Clark	50,096
Skates	F. E. Drake	51,155
Skates	J. Lovatt	51,466
Skates, Heater for	O. W. Taft	51,492
Skates, Roller	W. P. Gregg	48,929
Skate feet	A. H. Hook and J. H. Darlington	46,563
Skate sharpener	F. R. Willis	47,061
Skate sharpener	F. R. Willis	50,196
Skating pond, Artificial	M. C. Campbell	47,391
Skeins, Casting of wagon boxes	T. Consider	50,340
Skirts, Gathering, Frames for	J. M. Rose	46,944
Skirts, Hoop	J. Levy	47,738
Skirts, Hoop	H. Fredenburg	48,924
Skirt, Hoop, Clasp for	J. H. Doolittle	50,102
Skirt, Hoop, Clasping	C. L. Olmsted	50,728
Skirt, Hoop, Clinching clasps on	G. F. Wright	49,957
Skirts, Hoop, Joints for	S. J. Sherman	49,447
Skirts, Hoop, Joints of	T. D. Day	49,732
Skirt, Skeleton	D. E. Rugg	47,155
Skirt fastener	H. Link	51,733
Skirt lining, Fabric for	C. Spaunagel	50,317
Skiving and splitting machine	W. S. Marsh	48,964

Invention or Discovery.	Name of Patentee.	No.
Slate, School	J. La Bar	51,114
Slate frames, Edges of, Dressing	J. W. Sayre and A. C. Schull	50,170
Sleds	J. Stevens	45,874
Sleds, Boys'	D. G. Hussey	48,178
Sleds, Children's	D. G. Hussey	51,188
Sleds or carriages	H. Smith	47,580
Sleighs	I. Stephenson	48,736
Sleighs, Cutter	A. Arneman	50,672
Sleigh-bell attachment	W. E. Barton	48,040
Sleigh-bells to straps, Attaching	W. E. Barton	46,623
Slicer, Bread and meat	H. M. Shaw and C. B. Stillwell	46,150
Slicer, Bread and meat	J. E. Dow	46,229
Slicer, Bread and meat	J. D. Hall	46,350
Slicer, Bread and vegetable	S. E. Blake	45,689
Slicer, Meat and vegetable	G. B. Pullinger	45,751
Slicer, Vegetable	S. Walker	48,118
Slings, Knapsack	J. T. Warren	46,410
Slipper, Carpet	D. Bowker	48,788
Slop-pail and coal-hod, Combined	C. Jones	48,020
Slush, Grease from, Separating	D. H. Kaufmann	48,559
Smelting and melting furnace	W. Quann and W. T. Smith	51,266
Smoothing stone or implement	J. E. Tucker	49,956
Snap-hook	H. Mund	47,972
Snap-link	C. W. Saladee	50,167
Soap	D. F. Packer	46,817
Soap	J. B. Bennett and J. S. Gibbs	47,385
Soap	F. Kunkel	50,877
Soap	W. Nyce	51,119
Soap, Cutting	J. G. Perry	45,746
Soap, Fullers', Manufacture of	J. F. Rich	46,143
Soap composition	E. Sprague	50,180
Soap frames	D. Whitaker	48,753
Soap liquid	W. Sheppard	49,561
Socket for hose, chisel, &c	G. Banister	48,505
Soda, Carbonate of, bleaching powder, chlorine, and other products, Preparing.	T. Macfarlane	49,597
Soda fountains	F. J. Chapman	49,719
Soda fountains, Sirup stand for	C. M. Berry and C. C. Sheldrake	49,335
Soda-water, &c., Cooling	E. Bigelow	51,130
Soda-water apparatus, Acid chamber of, constructing the	W. Gee	49,871
Soda-water apparatus	F. A. Weber and W. H. Greene	46,283
Soda-water apparatus	J. Matthews, jr	50,255
Soda-water apparatus, Draught cock for	L. D. Hoyt and R. Murray	48,489
Soda-water apparatus, Draught tube for	F. A. Weber and W. H. Greene	46,284
Soda or potash from alkaline silicates, Liberating	F. O. Ward	46,979
Sofa	J. W. Moyer	46,014
Sofa, bed, and crib	S. Chapin	46,879
Sofa bedstead	E. Brady	47,512
Sofa bedstead	F. Keller	49,120
Sofa bedstead, Extension	J. Kena	50,939
Sofa or lounge	E. Smith	50,397
Soil, Pulverizing	L. S. Fithian	46,048
Soldering iron	W. K. Lewis	47,965
Sole, Channelled	G. McKay	48,238
Sole, Shoe, Voltaic	T. Hall	46,234
Sole, water-proof	J. F. Colburn	48,481
Sole for boots and shoes, Cutting	J. H. Walker	49,572
Solution to oil barrels, &c., Applying	J. O. Woodruff	50,649
Sorghum, Stripping	R. C. Wilcox	49,576
Sorghum, Sugar, wine and oil from, Manufacture	J. Myers	47,321
Sorghum evaporator	D. H. Iseminger	47,020
Sorghum evaporator	J. Brockway	47,921
Sound, Deadening	F. Fearon	48,350
Soup, Tomato	J. H. W. Huckins	47,545
Spades, Rotary	C. Comstock	46,995
Spade-step, Cutting and punching	S. Chesnut	50,416
Spading machine	W. R. Mears	49,642
Spark arrester	A. Prusmann	46,307
Spark arrester	A. Prusmann	46,308
Spectacles, Frame for	J. E. Spencer and E. Want	49,954
Spectrum, Heliographic and photographic, for producing line engravings.	F. Von Egloffstein	51,103
Spike	D. R. Pratt	51,265
Spike, Drawing	N. Adams	49,690
Spike, Drawing, Tool for	G. Stone	46,154
Spike, Railroad	W. M. Storm	48,494
Spindle bearing for spinning, Lubricating	G. W. Briggs	47,278
Spindles of wagon axles	J. M. Jay	47,769
Spinning, Bobbins for	J. Goulding	50,116
Spinning, Bobbin holder for	J. Goulding	50,240
Spinning, Bobbin holder for	J. Goulding	50,241
Spinning, Bobbin holder	E. Wright	50,311
Spinning, &c., Rolls for preparing fibrous material for	D. Read	48,134
Spinning, Self-acting mules for	A. H. Cummock	49,861

Invention or Discovery.	Name of Patentee.	No.
Spinning bobbins	W. Murdock	51,340
Spinning frames, Self-lubricating spindle bolsters of	S. T. Bartlett	47,271
Spinning frame, Self-oiling spindle bolsters for	W. F. Rippon and T. R. Robinson	45,752
Spinning frames, Upper bearings or bolsters for spindles of	M. D. Drake	47,195
Spinning jack	H. L. Moulton	50,024
Spinning jack	A. and G. Simpson	50,044
Spinning machines	T. Pye	46,386
Spinning machine	J. Rich	46,588
Spinning machine	W. Eberhard	48,917
Spinning machine	J. Eaton	49,988
Spinning machine	J. Byrkit	50,094
Spinning machine	M. Hulings	51,054
Spinning machines, Paper cop tube for	W. J. Innis	50,204
Spinning machines, Thread guides for	E. D. Hurst	45,718
Spinning rollers	I. and G. S. Goodspeed	46,896
Spirits, Distilling	A. Kreusler and W. T. Pelton	50,876
Spirits and other distillates, Measuring and testing	E. Payne	46,058
Spirits and other liquids, distilling	F. Haeck	51,403
Spirometers	A. P. Barnes	51,002
Spittoons	L. W. Barguet	49,493
Spittoons for dental chairs	W. W. Butler	51,552
Spittoon and foot warmer, Combined	G. B. Clarke	47,280
Splitting and skiving machine	W. S. Marsh	48,964
Spoke, Tenoning	L. A. Dole	50,768
Spoke machines	J. Foster	49,341
Spoke shave	S. S. Mowry and A. G. Bates	51,339
Spoke in wagon wheels, Setting	R. Walker	51,765
Sponge, Preparing, for stuffing, padding, &c	A. F. Moith	48,970
Spool, Heads to, Fastening the	L. N. Parks	47,658
Spools, Jack	D. R. Day and J. G. Folsom	4 ,507
Spools for winding yarn for beaming	B. Saunders	50,392
Spools and shuttles of sewing machines, Delivery of thread from.	W. Weetling	46,513
Spoon	R. Humphrey	46,907
Spoon, Ear, knife, and tweezer combined	R. C. English	50,106
Spoon, Invalid	D. J. Pearson	51,748
Spoon, knife, and fork-holder	G. L. Morse and L. Herrick	46,692
Spoon, Metal, Sheet	J. Fellows	48,164
Spoon, Metal, Sheet	J. Fellows	49,471
Spouts, Funnel, Corrugated	J. Walton	46,162
Spouts, Sap	A. Leitch	48,961
Spout or tubes, Metallic	E. Valentine and M. T. Rider	49,045
Spout and strainer, Combined	W. Polyblank	49,650
Spring	T. Shaw	47,663
Spring	J. C. Plumer	49,786
Spring, Bumper	R. Levington	45,927
Spring, Car	A. Buchanan	45,696
Spring, Car	W. Cox	45,815
Spring, Car	G. A. Riedel	47,373
Spring, Car	J. Murray	48,084
Spring, Car	T. F. Allyn	48,250
Spring, Car	W. Newbauer	49,137
Spring, Car	T. Shaw	49,560
Spring, Car	H. N. Black	50,415
Spring, Car	G. Douglas	50,807
Spring, Car	J. J. C. Smith	50,849
Spring, Car	J. J. C. Smith	50,850
Spring, Car	R. Vose	51,368
Spring, Car, Railroad	W. F. Converse	49,086
Spring, Carriage	A. J. Ritter	48,444
Spring, Carriage	H. H. Olds	49,545
Spring, Carriage	A. Selkirk	50,209
Spring, Carriage	T. Taylor	50,886
Spring, Carriage, braces for	C. C. Gleason	50,114
Spring, Coiling	G. L. Turner	47,882
Spring, Coupling, Gum-elastic	S. M. Hoover	47,305
Spring, Elastic, Straightening	J. W. Gray and C. H. Curtis	46,421
Spring, Furniture	W. C. Wyckoff	51,644
Spring, Main, of watch, Contracting barrels of	A. S. Clackner	49,978
Spring, Rubber, for wagons	S. G. Clough	51,697
Spring, Spiral	F. C. Payne	50,622
Spring, Steel, Tempering	W. Hughes	49,108
Spring, &c., Steel, Tempering, Compound for	L. W. Kelley	51,728
Spring, Window	E. K. Breckenridge	46,874
Spring, Wire, Flat	H. Kellog	50,420
Spring, Volute	J. Frecland and D. Ward	46,655
Spring bed-bottoms	G. E. Lord	46,119
Spring bolt-catch	G. M. Norris	47,741
Spring catch for doors	J. C. Plumer	46,697
Spring horse	H. F. Metzler	46,529
Spring punch	P. Bauer	49,364
Spring slat for bed bottoms	J. M. French	51,443
Spring for bedsteads	D. Manuel	51,516
Spring for furniture	D. Hawkins	50,471

Invention or Discovery.	Name of Patentee.	No.
Spring for upholstering purposes	W. H. Mallory	49,476
Sprues, Moulders'	M. R. Howell	45,716
Spur carrier, boot drawer, and pantaloon guard, Combined	E. P. Watson	45,776
Spurring or driving horses	J. Davis	50,803
Square, Carpenters', Indicating	H. K. Jones	46,191
Square, level, compass, and plumb staff, Combined	J. R. Abbott	51,675
Square, rule, cutter, blotter, and paper weight, Combination of.	A. H. Trego	50,404
Square, Try	J. Williams	49,670
Stacker, Chaff and straw	W. H. Loomis	46,918
Staging for buildings	W. Arronquier	47,179
Staging for building purposes	E. D. Walker	49,017
Stair-rod	W. F. Mersereau	48,825
Stair-rod	H. M. Hoover	49,270
Stair-rod fastening	H. Jackson	47,422
Stake, Attaching to railroad cars	J. Fortune	51,277
Stalk, Cutting	J. B. Ryder	48,312
Stalk and stubble in field preparatory to ploughing, Cutting	G. W. Wilson	51,507
Stamp, Cancelling	J. W. Foster	45,708
Stamp, Cancelling	M. P. Norton	49,432
Stamp, Hand	G. J. Hill	45,893
Stamp, Hand	T. S. Hudson and A. Hardy	48,338
Stamp, Hand	H. Holt	48,624
Stamp, Hand	D. H. Chamberlain	49,084
Stamp, Hand	S. J. Smith	49,452
Stamp, Hand	A. Jones	50,715
Stamp, Hand, Composition for preparing ribbons for	H. Holt	47,494
Stamp, Hamp, and canceller	J. B. Secor	50,501
Stamp, Hand, and embossing press	W. Burrows	50,556
Stamp, Hand, for printing	D. H. Chamberlain	46,076
Stamp, &c., Inking	C. M. Wetherill	49,038
Stamp, Ore-crushing	H. I. Behrens	50,326
Stamp, Ore-crushing	E. Dart	50,342
Stamp, Postage	G. W. Bowlsby	51,782
Stamp, Postage and revenue	S. W. Francis	48,389
Stamp, Postage and revenue	C. S. Wells	50,058
Stamp, Postage and revenue, Cancelling	T. S. Hudson	51,053
Stamp, Revenue	R. L. Smith	47,464
Stamping machines, and spring and weight piston engines	E. F. McFarland	51,737
Stanchions, Cattle	H. Maycock	45,728
Stand, Flower	P. B. Sheldon	47,664
Stand, Milk	A. R. Titus	49,321
Stand, Music	J. David	50,460
Stand, Photographic-camera	H. Manger	48,193
Stand, Sirup, for soda fountain	C. M. Berry and C. C. Sheldrake	49,335
Stand, Work, Ladies'	J. B. Atwater	48,888
Stand for ladies' cloaks	J. R. Palmenberg	48,989
Stand for ladies' figures	J. R. Palmenberg	49,145
Stand for latches	H. D. Stover	50,510
Stand for preserve jars	K. E. Ashley	50,674
Starching and glazing cords, braids, &c	D. McInroy	51,471
Staves, Cutting	H. M. Shaw	46,149
Staves, Cutting	J. I. Ralya	50,782
Stave-cutting machine	M. Randolph	48,028
Stave machines	J. W. Bowers	46,068
Stave machines	C. G. Dibble	46,548
Stave machines	P. Werum	48,468
Stave machine	G. R. Hay	48,486
Stave machine	J. S. Thompson	49,320
Steak mangler	J. P. Dorman	49,245
Steam, Blowing off	P. Taltavull	49,318
Steam-heating and fire-extinguishing apparatus	C. S. Brown	46,328
Steel	S. W. Young	49,050
Steel	J. Baur	49,495
Steel, Articles of, Sharpening and hardening	W. Rowland	51,087
Steel, Bessemer, Gun barrels, &c., from	J. Thompson	51,281
Steel, Cast, Making	S. W. Wood	46,041
Steel, Hardening and tempering	E. Savage and H. Stratton	48,213
Steel, Manufacture of	E. P. Hudson	45,828
Steel, Manufacture of	J. Baur	47,510
Steel, &c., Manufacture of	R. Mushet	49,487
Steel, Manufacture of	J. Deby, A. Trippel, and E. Gaussoin	50,804
Steel, Refining and hardening	H. Roscoe	50,039
Steel and iron	H. Bessemer	49,051
Steel and iron	H. Bessemer	49,052
Steel and iron	H. Bessemer	49,053
Steel and iron	H. Bessemer	49,055
Steel and iron, Bars, Shafts, and other articles of	C. Sanderson	50,084
Steel or iron, Cast, Uniting with wrought or cast iron surfaces	J. D. Whelpley and J. J. Storer	50,976
Steel and iron, Malleable	H. Bessemer	51,399
Steel and iron, Malleable	H. Bessemer	51,400
Steel and iron, Malleable	H. Bessemer	51,401
Steel and iron, Manufacture of	G. Parry	47,506
Steel and iron, Manufacture of	J. Henderson	50,474

Invention or Discovery.	Name of Patentee.	No.
Steel and iron, Manufacture of	H. Bessemer	51, 397
Steel and iron, Manufacture of	H. Bessemer	51, 398
Steering apparatus	A. H. North	48, 087
Steering apparatus	N. Richardson	49, 196
Steering apparatus	G. Coffin	49, 233
Steering apparatus	P. W. Robinson	51, 481
Stencil plates, Applying paint to	C. Bates	47, 917
Stereoscope	S. D. Goodall	48, 807
Stereotyped plates, Casting	W. F. Draper	51, 437
Stills, Setting	L. S. Fales	49, 740
Stills for distilling petroleum	J. Bibby and A. Lapham	48, 896
Stills for distilling petroleum	J. Rogers	50, 276
Stills for oil, &c	C. A. Hardy	46, 899
Stirring and cooling apparatus	A. G. Knapp	46, 476
Stirrup	C. W. Saladee	46, 711
Stirrup	C. W. Saladee	46, 712
Stirrup	J. S. Gould	49, 103
Stirrup, Saddle	A. Irion	50, 007
Stirrup fastening	C. H. Wellman	49, 813
Stirrup fastening, Safety	W. Fawcett	51, 708
Stock, Paper, Manufacture of	W. Delton	45, 791
Stock feeder	T. W. Pierce	46, 493
Stock for holding screw-cutting dies	E. C. C. Kellogg	47, 878
Stocking	E. V. Sears	50, 279
Stocks, Plane, Throat in, Dressing the	F. B. Marble	46, 372
Stone	R. Little	46, 422
Stone, Artificial	G. E. Van Derburgh	48, 746
Stone, Artificial	F. Ransome	50, 315
Stone, Artificial	F. Ransome	50, 316
Stone, Artificial, Solution for saturating	G. E. Van Derburgh	48, 747
Stone, Hay, &c., Gathering and loading	G. W. Holley	48, 175
Stone, Polishing and dressing	E. H. Lewis	47, 900
Stone breaker	P. W. Gates and D. R. Fraser	50, 813
Stone-cutting machinery	G. J. Wardwell	51, 271
Stone-cutting machinery	G. J. Wardwell	51, 272
Stone gatherer	P. S. Brewster and C. M. Hines	45, 970
Stone gatherer	J. L. Quinby	47, 566
Stone grinding and polishing machine	J. Harsha	48, 062
Stool, Piano	G. A. Sherlock	50, 042
Stools, Piano-forte, Base for	T. Odell	50, 488
Stool and chair, Barber's	H. Renwick	50, 032
Stop-washer for nuts	H. N. Armstrong	48, 353
Stopper, Bottle	E. R. Wilber	47, 483
Stopper for fruit jars	J. M. Whitall	47, 238
Stopper for jars, bottles, &c	N. Thompson	47, 779
Stopper for fruit jars	C. R. Doane	50, 806
Stopper for fruit jars	W. Chrysler	51, 020
Stove	W. Wheeler	45, 783
Stove	T. L. Sturtevant	46, 729
Stove	E. A. Parker	47, 218
Stove	C. Townes	47, 291
Stove	G. W. Walker	47, 474
Stove	W. Bamford and J. F. Tate, jr	48, 037
Stove	T. Scott	48, 240
Stove	M. Bratt	49, 707
Stove	A. O. Wilcox	50, 408
Stove, Air-tight	J. G. Allen	48, 144
Stove, Base-burning	H. J. Giles	46, 895
Stove, Base burning	W. B. Treadwell	47, 881
Stove, Burning	S. B. Sexton	47, 136
Stove, Cases for	J. P. Driver	50, 696
Stove, Coal	J. Morrison, jr	46, 483
Stove, Coal	W. B. Treadwell	48, 115
Stove, Coal	P. P. Stewart	48, 143
Stove, Coal	R. Bailey	48, 252
Stove, Coal	T. L. Sturtevant	48, 738
Stove, Coal	M. D. Wellman and J. Old	48, 751
Stove, Coal	D. S. Quimby	49, 153
Stove, Coal	J. Spear	49, 165
Stove, Coal	G. G. Wolfe	49, 333
Stove, Coal	Z. Hunt	50, 073
Stove, Coal	L. Rathbone and W. Hailes	51, 085
Stove, Coal	L. W. Campbell	51, 143
Stove, Coal	G. Chilson	51, 424
Stove, Coal	R. Bailey	51, 681
Stove, Coal, Air-tight	J. S. Todd	47, 670
Stove, Coal, Base-burning	D. B. Cox	51, 649
Stove, Coal, Kingsbury's	W. E. Lane	47, 649
Stove, Coal-oil	W. B. Billings	45, 957
Stove, Coal-oil	C. H. Richman	46, 141
Stove, Cook	M. L. Horton	50, 072
Stove, Cook	A. S. Dunham	50, 231
Stove, Cook	J. Van	50, 519
Stove, Cook	J. J. Savage	51, 224

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Stove, Cook, Hood for	F. Raymond and A. Miller	48,592
Stove, Cooking	L. Rathbone and W. Hailes	47,567
Stove, Cooking	H. Mitchell	47,845
Stove, Cooking	C. J. Woolson	47,890
Stove, Cooking	W. B. Kimball	49,278
Stove, Cooking	M. L. Horton	50,071
Stove, Cooking	C. J. Paine	50,268
Stove, Cooking	J. D. Conner	50,339
Stove, Cooking	T. M. Baker	50,765
Stove, Cooking	E. Bussey	51,292
Stove, Cooking	A. C. Williams	51,406
Stove, Cooking, Flat-top and elevated	J. McKnight	45,930
Stove, Cooking, Gas	E. A. Leland	47,650
Stove, Cooking and heating	M. Gilmore	47,713
Stove, Drum	D. M. Younkman	48,231
Stove, Fire-lighting attachment of	J. W. Elliot	51,574
Stove, &c., fire pots for	W. Ennis	47,895
Stove, Foot	E. H. Reynolds	47,749
Stove, furnace, &c., Fire pot for	P. P. Stewart	47,049
Stove, Gas	L. Ewing	46,651
Stove, Gas	E. J. Caldwell	49,469
Stove, Gas	L. Ewing	51,441
Stove, Gas-burning	H. Howson	46,605
Stove, Gas, and coal-oil lamp	J. E. Ambrose	46,045
Stove, Globe	G. W. Herrick	48,019
Stove, Heating	J. Crea	48,501
Stove, Kerosene	W. H. Elliot	47,529
Stove, Petroleum	J. Holmes	48,131
Stoves, Petroleum	H. E. Smith	48,732
Stoves, Petroleum	T. C. Hargrave	50,821
Stoves, Radiators for	W. P. and H. A. Adams	46,765
Stove, Soapstone, Corner of, joint for	J. H. Flagg	48,542
Stove, Soapstone, Fitting corners of	P. Dodge	45,982
Stove, Stone	P. Dodge	46,455
Stove, Summer	F. Morandi	49,136
Stove, Wood, Twin	A. Worley	46,746
Stove, Wood, Base-burning	J. A. Lane	48,289
Stove coal-lifter	C. E. Seavey	50,737
Stove covers, &c., Tool for lifting	P. A. Gladwin	48,676
Stove drum	T. Robert	46,499
Stove-pipe, Heat radiator for	N. F. Goodrich	50,069
Stove-pipe damper	E. Mackwitz and W. Frankfurth	46,007
Stove-pipe drum	T. Whitson	47,887
Stove-pipe drum	G. D. Greenleaf	47,945
Stove-pipe drum	W. Kroeger	48,184
Stove-pipe drum	J. C. Paine	48,716
Stove-pipe elbow	J. G. Perry	45,745
Stove-pipe elbow	J. G. Perry	46,934
Stove-pipe elbow	O. W. Stow	51,240
Stove-pipe thimble	T. M. Losie	46,369
Stove-pipe thimble	S. W. Batholomew	49,494
Stove-pipe thimble	S. Eddy	50,924
Stove or furnace, Heat radiating attachment for	J. B. Hyzer	48,180
Stove for heating irons for tailors' and hatters' use	C. Woodbury	51,641
Stove and lamp, Combined	C. B. Grey	48,678
Strainer and spout, Combined	W. Polyblank	49,650
Strap adjuster	H. E. Gemrig	51,581
Straw, Stacking	D. M. Cochran and A. Gaar	48,519
Straw, Treating, to obtain paper pulp	T. A. Nixon	47,217
Straw, Treating, for paper pulp	H. B. Meech	50,835
Straw, wood, and other vegetable fibre, Treating	J. W. Dixon	51,705
Straw, wood, &c., Pulping	J. W. Dixon	51,706
Straw-boards, Drying	W. H. Severson	50,284
Straw-cutter and threshing machines, Combined	D. Kaufman	46,470
Street-washers	J. McClelland	46,574
Stubble coulters	M. A. Spink	48,842
Stubble and stalk in field preparatory to ploughing, Cutting	G. W. Wilson	51,509
Studs, Elastic, for doors	A. Eliaers	45,987
Stud, Shirt	R. B. Ruggles	49,304
Studs, Shirt collar	J. Ridge and S. F. Estell	49,785
Studs and buttons	S. E. Ritter	47,669
Stuffing-boxes for valve spindles	T. and J. Barber	48,141
Stump, Extracting	E. C. Haserick	50,247
Stump extractor	H. Lemon	45,724
Stump extractor	S. Derr	46,085
Stump extractor	T. Crane	50,696
Stump extractor	L. D. Livermore	51,200
Stump extractor and wall-builders	G. W. Packer, jr	49,640
Stump and grub extractors	I. Van Kerson	48,747
Submarine porthole closers	J. H. Kavanagh	48,078
Submarine safety mouthpiece	J. Hawkins	46,904
Substances, Agitating and kneading	W. Adamson	47,262
Substances, Organic, Preserving	J. G. Staunton	45,764
Sugar	H. Wheeler and J. E. Hatcher	51,502

Invention or Discovery.	Name of Patentee.	No.
Sugar, Dividing, into blocks	W. H. Whitmore	47,147
Sugar, Making	T. Moore	48,580
Sugar, Refining, Collecting spirits during the	F. Reid	50,081
Sugar, Removing foreign substances from	J. Hoover	47,420
Sugar, Uncrystallized, and condensed milk, Compound of	G. R. Percy	46,022
Sugar-boiling	E. Beanes and C. W. Finzel	46,419
Sugar-cane, Crushing	D. C. Turner	46,835
Sugar-cane, Stripping	L. R. Witherell	49,577
Sugar-pans, Shifting	M. Tibbets	47,583
Sugar in centrifugal machine, Liquoring	F. Seiberlich	49,310
Sugar from corn, Manufacture of	H. H. Tilden	49,012
Sugar from Indian corn and other grain	F. W. Goessling	49,750
Sugar and sirup from Indian corn and other grain	F. W. Goessling	49,749
Summer-piece and register, Combined	S. S. Bent	45,688
Sun-dials, Pocket	H. H. Hemper	48,812
Superphosphates	G. A. Liebeg	49,831
Superphosphate of lime	E. P. Baugh	47,610
Supporter, Arm, for rifleman	S. Kinman	46,365
Supporters, Grapevine	F. B. Green	47,415
Supporters, Necktie	G. K. Snow	46,426
Supporters, Shoulder	J. W. Kimball and J. Mahady	47,836
Supporters, Uterine	S. L. Hockert	49,406
Supporters, Window	J. O. Harris	46,900
Surface sizing, wadding, &c., Machine for	S. Baxendale	46,065
Surgical apparatus for exsections	E. D. Hudson	50,128
Surveying instruments	K. Schow	47,906
Suspenders	A. W. Upton	47,348
Suspenders	B. J. Greely	50,351
Suspenders	E. Burgess	51,137
Suspenders, Chest expanding	G. W. Walker	46,161
Sweeping machine, Street	S. Emlen	46,094
Sweeping machine, Street	D. Sargent	47,461
Sweeping machine, Street	A. J. Roberts	50,629
Sweeping machine, Street	A. J. Roberts	50,630
Swings	F. R. Wolfinger	49,465
Swings	L. F. Noe	50,618
Swings, Baby	J. Wolf	51,772
Switches, Operating	J. F. Wilson and J. C. Bartlett	45,889
Switches, Railroad	M. F. Cummings	46,338
Switches, Railroad	J. W. Colwell	47,089
Switches, Railroad	W. Wharton, jr	48,470
Switches, Railroad	M. Ball	48,640
Switches, Railroad	E. B. Lake	49,536
Switches, Railroad	D. Warren	49,574
Switches, Railroad	W. Wharton	49,668
Switches, Railroad	G. Douglass	50,564
Switches, Railroad	A. Watson and G. W. Miller	50,972
Switches, Railroad	W. Wharton	51,373
Syringes	L. Wheelock	47,248
Syringes	H. D. Lockwood	49,900
Syringes, Catarrhal	A. P. Lighthall	50,722
Syringes, Elastic	H. E. Davidson	51,778
Sirup, &c., Cooling	F. W. Tilton	49,664
Sirup, Malt	T. Hawkes	48,396
Sirup and saccharine solutions, Treating	E. P. Eastwick	47,402
Sirup and sugar from Indian corn and other grain	F. W. Goessling	49,749
Sriup from Indian corn and other grain	F. W. Goessling	49,751

T.

Table	R. R. Crowe	49,729
Table	C. Cuttica	49,677
Table, Billiard, Chalkholder for	H. M. Wall	51,499
Table, Billiard, Pockets to, Fastening	L. Peterson	46,136
Tables, Carving, Heating	S. Patrick	46,491
Table, Extension	A. Iské	46,240
Table, Extension, Slide for	E. P. Allyn	47,374
Table, Folding	G. G. Small	50,664
Table, Folding, or bench	R. Carter, jr	49,500
Table, Moulders	J. Lebeau	46,859
Table, Movable joint for	H. M. House	47,726
Table, Shaking and rocking for amalgamating gold, &c	A. Behr and W. J. Ward	47,384
Table, Surgeons' operating	T. McIlroy	49,132
Table, Work, and desk, Combined	J. Trevor	47,058
Table leaf supporter	D. Bull	51,647
Table for hospitals	S. J. A. Hussey	47,831
Table for invalids	S. Ustick	48,854
Table for the sick	A. Millhauser	49,907
Table for ores, Concentrating	G. Kustel	46,806
Table and apparatus for invalids	S. Ustick	49,807
Table and bedstead, Combined	J. R. Bennett and P. W. Birch	49,701
Table or chair, Folding	F. Ludke	46,121
Table and chest	G. W. Zeigler	49,821
Table and desk	C. Baldwin	47,378

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Table or desk	W. Hemmer	48,939
Tablets, Composition for, Transparent	H. J. Griswold	50,658
Tablet, Writing	G. Asmus	46,982
Tablet, Writing	T. Weaver	47,175
Tack-driver	B. C. Davis	47,935
Tackle, Hoisting	J. W. Norcross	51,742
Tackle, Safety	P. J. Jamet	48,034
Tackle-block	J. W. Norcross	50,379
Tackle-blocks, Casting	J. W. Norcross	47,656
Tags, Making	J. B. Clark	46,543
Tallow, lard, &c., Rendering	C. E. Gray	46,103
Tallow, lard and grease from the refuse of rendering tanks, Separating.	P. Andrew	46,204
Tallying lumber, &c., Machines for	G. R. Lewis	48,078
Tallying machine for measuring grain	S. Hudson	45,829
Tanks for transporting oil	G. W. Howard	50,126
Tanks for storing petroleum	J. Frazer and J. Calkins	50,348
Tanning	C. Barton	46,446
Tanning	O. H. Brewer and W. Wymer	48,361
Tanning	W. E. Terry	48,740
Tanning	C. R. Dean	50,228
Tanning	J. Price	50,662
Tanning	S. A. Hickel	50,872
Tanning	J. M. Muller	50,945
Tanning	H. W. Adams	50,998
Tanning	J. E. Park	51,407
Tanning	W. H. Towers	51,762
Tanning, Composition for	E. Keith and B. Thorn	49,886
Tanning, Process for	B. H. McNulty and W. Keen	47,844
Tanning, Process for	O. A. Coe	50,222
Tanning, Process for	J. J. Johnson and E. J. Murray	50,936
Tanning apparatus	H. Lieberman	51,655
Tapes, ribbons, and thread for use, Arranging	M. B. Westhead	50,318
Tapes, Weaving, Winding yarn for	J. Gibbs	51,171
Tapping branch for water and other pipes	H. Knight	46,246
Tar, paraffine, &c., Treating oil wells to remove	J. Fraser	47,410
Tea-leaves, Rolling	K. Goddard	47,261
Teams, Attaching, to farming implements	H. A. Cook	50,908
Teeth, Artificial	N. C. Fowler	46,345
Teeth, Artificial	N. C. Fowler	46,346
Teeth, Artificial	W. Ballard	51,001
Teeth, Cleansing, Composition for	E. J. Field	50,110
Teeth, Cultivator, Hanging	J. Fowler and F. M. Bacon	47,008
Teeth, Plugging instrument for the	B. Wood	46,602
Telegraph, Electro-magnetic	R. Boyle	49,585
Telegraph, Electro-phonetic	R. E. House	48,408
Telegraphs, Line wires for	M. G. Farmer and G. F. Milliken	47,940
Telegraphs, Magnets for, Receiving	J. J. Clark	46,639
Telegraphs, Magnetic	C. Kirchhof	51,193
Telegraphs, Magnetic	C. Kirchhof	51,261
Telegraphs, Paper for, Punching	M. Lefferts	51,464
Telegraph cable	D. H. Southworth	46,613
Telegraph wires, Insulating, Composition for	S. C. Bishop	46,750
Telegraphic posts	T. W. Shields	47,910
Telegraphic repeaters	W. H. Hamilton	49,875
Tent frames	W. H. Clark	49,605
Tethering apparatus	S. L. Avery	49,492
Thermal motor	G. J. Washburn	48,607
Thills, Adjustable	W. P. Robinson	49,552
Thill attachment	R. B. Willis	45,888
Thill holder, Metallic	E. Brown	47,765
Thill tug	W. H. Noyes	47,903
Thill tug	T. Neely and C. Bishop	50,615
Thills to carriages, Connecting	B. E. Sampson	48,313
Thills to carriages, Coupling	D. C. Breed	45,812
Thimble, Stove-pipe	T. M. Losie	46,369
Threshing machine	O. Holmes	46,108
Threshing machine	S. E. Oviatt	47,326
Threshing machine	N. Palmer	47,746
Threshing machine	C. B. W. T. Brown	48,047
Threshing machine	S. Spencer	48,108
Threshing machine	B. H. Kepner	49,533
Threshing machines	H. Read	49,551
Threshing machines, Band cutter for	W. U. Hoover	48,279
Threshing machines, Band cutter and feeder for	W. U. Hoover	46,905
Threshing machine, Feeding	E. Valentine and M. T. Rider	49,044
Threshing machines, Swinging gear for	J. Kline and V. Becker	45,838
Threshing machine and straw cutter, Combined	D. Kaufman	46,474
Threads, &c., Dressing and finishing	E. Burgy and L. Guillernin	46,314
Threads, Finishing	T. Kohn	48,958
Threads, silks, &c., Dressing	J. Day	49,240
Threads, Spooling	A. B. Glover	50,575
Threads, tape, ribbons for use, Arranging	M. B. Westhead	50,318
Threads, Winding, from the skein	J. Crutchett	45,953

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Thread from shuttles and spools of sewing machines, Delivery of the.	W. Weitling	46, 513
Ticket, Railroad, Identifying	A. S. Chittenden	47, 798
Ticket boxes	E. Hambuger	48, 274
Ticket holder	V. G. Arnold	46, 519
Ticket holder, Railroad	J. O. Harris	46, 469
Tide, Producing motive power by the vertical rise and fall of the.	A. W. Scharit	45, 867
Tiles, Dressing	J. Reilly	51, 219
Tile and brick machine	B. F. St. John and H. Horst	50, 508
Timber, Preserving	A. Hamar	51, 528
Timber, Splicing	H. M. Claflen	47, 395
Time detectors, Watchmen's	J. E. Buerk	48, 048
Time indicators for railroad trains	J. C. S. Fitzpatrick	46, 787
Time-keepers	J. Stephenson	47, 998
Timepieces, Escapements for	D. J. Mozart	46, 576
Timepieces, Globe	T. R. Timby	47, 584
Timepieces, Universal	W. B. Purdy	46, 496
Timepieces, Universal	A. H. Hall	47, 065
Time reporters	T. Ascherfeld	47, 266
Timing of explosive shells by clockwork	F. Toggenburger	47, 586
Tires, Shrinking	C. V. Statler	45, 872
Tires, Shrinking	C. Weitman	51, 636
Tires, Upsetting	A. Stedman	48, 110
Tires, Wagon, Upsetting	G. Huntington	48, 245
Tire fastener	R. Hatrick	47, 718
Tire-upsetting machine	H. L. Howard	51, 456
Toaster and boiler	T. C. Law	51, 064
Toasters or boilers, Wire	H. A. Hildreth and W. J. Johnson	47, 302
Tobacco	H. D. Smith	46, 826
Tobacco, Baling for packing	J. H. Stone	50, 047
Tobacco, Curing	W. W. Huse	48, 689
Tobacco, Curing	P. Rauch	46, 387
Tobacco, Cutting	L. Planer	46, 620
Tobacco, Cutting	W. W. Huse	46, 908
Tobacco, Cutting	F. R. Ritterhoff, C. A. Colquitt, and W. Mulchahey.	47, 131
Tobacco, Cutting	H. A. Morse	47, 742
Tobacco, Cutting	W. J. Stratton and H. G. Tideman	49, 317
Tobacco, Drying	J. H. Balsley	46, 323
Tobacco, Granulating	J. H. Harris	48, 680
Tobacco, Pressing	J. D. King	48, 955
Tobacco dryer	W. H. Pease	48, 306
Tobacco paper	H. J. Hall	46, 233
Tobacco-smoke purifyer	J. Bavier	46, 989
Tobacco stopper	J. M. Brown	46, 211
Toe-piece for lasting machine	A. S. McIntire and N. S. Thompson	46, 375
Tongs, Blacksmiths'	C. W. Le Count	50, 603
Tongs, Fire	B. Holly	50, 584
Tongs, Gas-fitters'	A. B. Lipsey	49, 424
Tongs, Grapple, for oil wells	O. B. Latham	51, 325
Tongs, Pipe	D. C. Stillson and J. C. Chapman	50, 748
Tonic bitters	I. Hellman	47, 204
Tools	A. W. Park	48, 027
Tools, Expanding	J. Critchley	51, 563
Tool holder, adjustable	C. P. Benoit	46, 438
Tool stock	W. W. Draper	48, 763
Tool for drawing spikes	G. Stone	46, 154
Top, Spinning	L. Cramer	45, 816
Torpedoes	H. Holden	49, 474
Torpedoes, Discharging	W. W. W. Wood and J. L. Lay	46, 851
Torpedoes, Exploding, in artesian wells	E. A. L. Roberts	47, 458
Torpedoes, &c., Operating	J. L. Lay	46, 850
Torpedoes, Submarine, Carrying and exploding	W. W. W. Wood and J. L. Lay	46, 852
Torpedo room	E. R. Chamberlain	48, 260
Torpedoes for oil wells	J. F. Boynton	49, 706
Torpedoes for oil wells	A. T. Ballantine	50, 324
Torpedoes or shells, Submarine, Operating	W. W. W. Wood and J. L. Lay	46, 853
Toy	H. C. Ketcham	47, 552
Toys, Composition for manufacturing of	R. Borcherdt and H. Bergman	51, 009
Toy, Dancing	J. M. Cromwell	46, 997
Toys, Dolls' heads and other, Constructing	L. E. Sallee	46, 270
Toy blocks	S. L. Hill	51, 720
Toy block, Mosaic	T. G. Harrold	46, 525
Toy spring-gun	A. Hall	47, 815
Traces, Attaching to whiffletrees of vehicles	E. Brown	50, 682
Trace connection	J. E. Seavey	47, 366
Trace fastener	D. H. Clock and F. D. Ryan	51, 425
Trace fastening	D. E. Holmes	50, 585
Trace lock	J. B. Shaw	46, 590
Trace trimmer	W. L. Hutchinson	49, 110
Trace to whiffletrees, Attaching	E. Calderwood	48, 364
Tracks, Car, Railway	D. H. Dotterer	49, 510
Tracks, Car, Raising	J. Temple	51, 523

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Track clearer, Railroad	G. C. Sharp	50, 634
Track layer, Automatic	J. L. Nichols	47, 033
Tracks for railroads	A. C. Beach	49, 698
Trains, Railway, Supplying with water	L. H. Lezott	50, 013
Tram way for ferry-boats	N. W. Wheeler	47, 479
Training the muscles in writing	E. G. Squires	46, 827
Traps, Animal	W. S. Gitchell	46, 557
Traps, Animal	J. Wheelock	46, 741
Traps, Animal	G. W. Pagett	47, 563
Traps, Animal	W. F. Caswell	48, 905
Traps, Animal	J. W. Churchill	49, 378
Traps, Animal	A. Edwards	49, 735
Traps, Animal	L. J. Baker	51, 283
Traps, Animal	B. F. Sanford	51, 356
Traps, Animal	S. Knight	51, 463
Traps, Animal	G. E. Clark	51, 777
Traps, Animal, Self-setting	H. B. Myers	46, 379
Traps, Bed bug	W. Tapper	51, 493
Traps, Bird	R. Rex	49, 923
Traps, Box, for animals	B. B. and J. R. Hill	46, 356
Traps, Coal, Safety	T. W. Pratt	50, 387
Traps, Fly	D. Lake	45, 839
Traps, Steam	L. W. Woodward	46, 416
Traps, Steam	J. C. and G. Shackleton	46, 825
Traps, Steam	P. Hogg	47, 304
Traps, Steam	J. W. Bishop	47, 181
Traps, Steam	L. H. Thomas	49, 174
Treadle for operating machinery	J. J. Kimball	45, 837
Treadle motion	A. L. Dewey	47, 282
Trees, Disease in, Remedy for	H. Funnell	47, 099
Trees, Fruit, &c., Preventing insects from injuring	C. Fisher	49, 869
Trees, Protecting, from injury while ploughing	R. Alden	46, 616
Tree protectors	T. Hilton	46, 298
Tree protectors	A. T. Ring	48, 838
Tree protectors	L. Sanford	49, 440
Tree protectors	J. C. Starbuck	49, 453
Tremolo attachment	R. W. Carpenter	48, 386
Trimmings, Fluting	S. Totten	46, 157
Troughs, Eave	F. J. Emery	46, 093
Trough for raising dough	H. S. McKean	46, 688
Trucks, Car	E. Thurston and J. R. Ledyard	47, 880
Trucks, Car	C. H. Hall	49, 400
Trucks, Car	C. F. Jauriet	50, 594
Trucks, Car, Frames for	D. B. Rogers	47, 863
Truck, Car, Keybolt connection of	J. J. Sherman	49, 163
Trucks, Car, Railroad	C. Schouberszky	46, 316
Trucks, Car, Railroad	J. P. Laird	51, 063
Truck irons, Bending and punching	P. L. Weimer	50, 753
Truck for pulling stones	G. L. Sheldon	48, 315
Trunks	J. H. Whitfield	50, 059
Trunks, Roller cleat for	J. A. Lieb and J. Schmadel	47, 117
Trunk caster	W. O. Headley	48, 937
Trunk stays	J. M. Dailey	47, 092
Trusses	C. W. Betzell	47, 612
Trusses	S. S. Ritter	49, 437
Trusses	R. E. Downie	51, 108
Trusses, Car, Railroad	J. F. Keeler	45, 834
Tub for washing and other purposes	J. Danner	46, 085
Tubes, Boring	A. Wyckoff	51, 252
Tubes, drills, &c., Extractor of, from oil wells	W. R. Hinsdale	49, 628
Tubes, Draught, for soda water apparatus	F. A. Weber and W. H. Greene	46, 284
Tubes, Inhaling	C. Bullock	48, 789
Tubes, Lap-welded, Finishing	P. L. Weimer	50, 781
Tubes, Metallic	E. Valentine and M. S. Ridout	46, 311
Tubes, Oil well, Packing for	C. L. Noe	49, 544
Tubes, Oil well, Packing for	J. Parham, jr	49, 783
Tubes, Packing, for oil well	G. E. Mills	49, 778
Tubes, Well, Deep	H. R. Koon	49, 418
Tubes, Well, Deep, Sinking	H. R. and M. T. Barnes	49, 362
Tubes, Well, Packing for	P. Sicouret	49, 599
Tubes, Well, Sinking	C. W. Kinne	50, 142
Tube expander	J. H. Knickerbocker	49, 765
Tube packing	S. L. Fox	45, 822
Tube sheet cutter	D. E. Rice and W. Evered	47, 983
Tubes from wells, Withdrawing	W. H. Downing	47, 194
Tubes for caves in oil or other wells	J. A. Patterson	46, 818
Tubes of boilers or condensers, Packing	J. Newkirk	49, 295
Tubes of sheet metal, Forming	M. G. Wilder	47, 888
Tubes or pipes for wells	T. Dutton and T. Maguire	50, 343
Tubes or spouts, Metallic	E. Valentine and M. T. Rider	49, 045
Tubes to boilers, Sealing, Tool for	J. Daley and J. H. Marvill	46, 339
Tubes and pumps for wells	J. H. Bump	51, 136
Tubing, Flexible	E. P. Gleason	46, 558
Tubing, Flexible	D. K. Hoxie and T. L. Reed	51, 052

Invention or Discovery.	Name of Patentee.	No.
Tubing, Flexible, for illuminating gas	W. B. S. Taylor	46,507
Tubing, Metal, Sheet	S. M. Cate	51,017
Tubing tanks, roofing, wainscoating boats, and other structures, Material for.	J. K. Mayo	51,735
Tumblers, pitchers, &c	G. G. Percival	48,996
Tumblers, Washing	B. Hart	48,934
Tunnel and scale pan	A. A. Smith	50,636
Tunnelling and mining machine	H. Haupt and J. Y. Smith	47,168
Turn-table, Railroad	J. I. Kingsley	51,192
Turpentine, &e	A. H. Emery	49,249
Turpentine, Spirits of	J. Johnson	50,132
Turpentine, Spirits of, oil, resin, and other products from pine wood, Obtaining.	A. H. Emery	46,092
Turpentine and other products from resinous wood, Extracting	D. Hull	48,406
Turrets, Monitor, Raising by hydraulic pressure	S. Wilmarth	51,378
Turrets and guns, Operating	J. B. Eads	46,223
Tuyere	J. R. Harrington	46,526
Tuyere	D. S. Lay	48,963
Tuyere	W. P. Cain	51,692
Tuyere, Adjustable	B. G. Noble	48,974
Tuyere, Forge	R. Platt	48,998
Tweezer, knife, and ear spoon, Combined	B. C. English	50,107
Tweezer and screw-driver	D. F. Hartford	47,102
Twine, Paper	J. P. Tice	46,405
Twine, Paper, Manufaeture of	E. B. Bingham	46,208
Type, Flexible, and apparatus for printing	H. Tubesing	47,262
Type, Photo-electro	W. A. Leggs and G. E. Desbarats	48,035
Type, Printing, Scrip	H. J. Hewitt	50,245
U.		
Umbrellas	J. S. Fee	48,267
Umbrellas	G. L. Peabody	49,912
Umbrellas	W. Damerel	49,986
Umbrellas	H. Hotchkiss	50,587
Umbrellas	J. H. Parsons	51,616
Umbrellas, &c., Inserting glass in	E. A. Pond and M. S. Richardson	50,492
Umbrella holders	J. A. Minor	50,261
Uterine supporters	S. L. Hockert	49,406
V.		
Valise, Saddle	R. McMurray and J. S. Topham	47,028
Valise, Travelling	F. W. Lamoureux	49,896
Valise for artillery harness	W. H. Wilkinson	47,889
Valise and seat, Combined	S. B. Holden	46,187
Valve	D. D. Allen	48,883
Valve, Automatic, for steam radiators	J. P. Wood	47,240
Valve, Balance plug	S. Smith and B. Pickering	51,329
Valve, Balance puppet	R. C. Bristol	50,443
Valve, Balance slided	C. E. Emery	47,284
Valve, Core	G. Shield	50,394
Valve, Cut-off	W. McClintock	50,304
Valve, Cut-off	J. L. Albertson	50,320
Velve, Cut-off, for steam engines	H. O. Perry	46,932
Valve, Escape, for pumps	E. A. Floyd	48,543
Valve, Globe	W. Chesley	50,219
Valve, Governor	O. L. Brown	48,652
Valve, Governor	C. W. Le Count	49,422
Valve, Governor	R. W. Gardner and J. Robertson	51,037
Valve, Governor, for steam engines	S. Mills	48,969
Valve, Lock, for canal gates	J. Jerome and L. K. Cole	47,643
Valve, Oseillating	G. Davis	45,910
Valve, Pump	C. B. and J. Hardick	51,653
Valve, Safety	J. Y. Smith	47,869
Valve, Safety, Operating	W. S. Hudson	46,238
Valve, Safety, for spring balances	T. S. Ray and S. E. Cleveland	51,350
Valve, Safety, for steam generators	S. G. Barker	49,068
Valve, Safety, for steam generators	R. Wood	50,376
Valve, Safety, for steam generators	S. Nowland	51,610
Valve, Slide	C. C. H. Brightly	46,991
Valve, Slide	J. B. Cochrane	47,932
Valve, Slide	J. G. Ives	48,070
Valve, Slide	J. A. Woodbury	48,611
Valve, Slide	A. Buehanan	50,231
Valve, Slide	S. D. White	50,527
Valve, Slide	H. Spangler	50,746
Valve, Slide, Balanced	A. S. Cameron	48,901
Valve, Slide, Balaneed	J. Rankin	47,453
Valve, Slide, Balanced	J. Rowbotham	51,393
Valve, Slide, for steam engines	S. F. Hodge	49,267
Valve, Slide, for steam engines	G. Thackeray	50,750
Valve, Slide, for steam engines	C. W. Crawford	51,023
Valve, Slide, for steam engines	A. W. Jones	51,656

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Valve, Steam	J. Johnson	49,414
Valve, Steam regulator	G. H. Fox	48,166
Valve, Steam, or water	C. E. Ricker	51,221
Valve, Stop	J. McClelland	46,571
Valve, Stop	E. Andrews	51,533
Valve, Stop, Refitting	S. Wing	49,203
Valve cocks	W. Chesley	46,077
Valve cocks, Globe	F. Luinkenheimer	46,685
Valve cocks, Steam, Screw	S. D. Fales	47,097
Valve gear, Cut-off	K. H. Loomis	49,284
Valve gear, Throttle	H. W. Warner	48,120
Valve gear for direct-acting steam engines	W. H. Guild and W. F. Garrison	51,454
Valve gear for oscillating engines	H. T. Carter	48,904
Valve gear for steam engines	C. E. Gage	47,492
Valve gear for steam engines	J. W. Maloy	48,418
Valve gear for steam engines	A. S. Cameron	50,218
Valve gear for steam engines	J. S. Barden	50,414
Valve gear for steam engines	W. H. Stanton and A. D. Spencer	50,966
Valve regulators, Safety	P. Riodan	46,142
Valve spindles, Stuffing boxes for	T. and J. Barber	48,147
Valve for faucets, Stop	W. Krull	49,894
Valve for steam engines	O. T. Earle	45,820
Valve for steam engines	J. E. Thorpe	47,072
Valve for steam engines	A. Morton	47,122
Valve for steam engines	J. W. Carhart	48,902
Valve for steam engines	T. Clark	49,858
Valve for steam engines	C. W. Tremain	50,050
Valve for steam engines	E. Rogers	50,389
Valve for steam engines	W. M. Henderson	51,314
Valve for steam hammers	J. Watt	50,407
Valve for steam pipes	S. R. Warner	47,073
Valve for steam pipes	A. R. Treadway and S. R. Warner	47,057
Valve for steam radiators	F. Presser	49,918
Valve for submarine ordnance	J. F. Cleu	46,080
Vapors, Antiseptic, Impregnating the air of rooms with	A. J. Sax	48,352
Vapors, Inhaling	A. P. Lighthill	47,434
Vapors, Noxious, Disinfecting	W. Adamson	46,317
Vapor inhalers	D. Russell	50,735
Varnish, &c., Composition for	P. Prescott	46,024
Vegetables, Cutting and reducing	T. J. Sloan	48,316
Vegetables, Disease in, Composition for preventing	J. B. Tribble	46,957
Vegetables, &c., Extracts from, Obtaining	C. Chilcott	47,393
Vegetables, Skimming	O. Hase	48,779
Vegetable slicer	T. Mason	48,700
Vegetable washer	F. W. Bacon	48,477
Vegetable washer	F. Arnold	50,888
Vegetable or animal substances, Case for preserving during transportation.	J. G. Staunton	45,764
Vegetable and animal substances, Preserving	F. Stabler	50,965
Vegetable and animal substances, Preserving	R. Jones	51,280
Vehicles	Z. B. Wakeman	47,473
Vehicles	O. E. Miles	49,289
Vehicles, Breeching hooks for	E. Brown	48,513
Vehicles, Tops of, Attaching and detaching	D. A. King and V. N. Gardner	47,959
Vehicles, Whiffletrees of, Attaching traces to	E. Brown	50,682
Velocipedes	W. Quinn	47,220
Velocipede trotting or pacing horse	H. A. Reynolds	46,705
Ventilating	H. A. Gouge	47,633
Ventilating, heating and cooling	D. E. Somes	51,236
Ventilating apparatus	E. Y. Robbins	48,722
Ventilating apparatus for railroad cars	J. B. Talmadge	46,831
Ventilating apparatus for steam vessels	J. G. Woodward	50,434
Ventilating car windows	G. Mann, jr	50,831
Ventilating pads	J. P. McLean	50,147
Ventilating railroad cars	T. H. B. Sanders	50,960
Ventilating windows for railroad cars	R. Monroe, E. Stone, and E. St. John	51,607
Ventilating and cooling dwellings, churches, hospitals, theatres, and other buildings.	D. E. Somes	46,596
Ventilating and cooling ships and other vessels	D. E. Somes	46,593
Ventilator	B. J. Burnett	45,814
Ventilator	P. Lear	46,913
Ventilator	H. A. Gouge	47,413
Ventilator	B. J. Burnett	50,794
Ventilator, Centrifugal	A. P. Blake	46,067
Ventilator, Hat	A. Komp	49,767
Ventilator, Self-regulating	N. Hammond	46,898
Ventilator, Stove-pipe and draught damper	G. G. Wolfe	46,414
Ventilator for houses	B. J. Burnett	49,373
Ventilator for ships	B. J. Burnett	49,374
Ventilator and damper	J. H. Littlefield	49,899
Vermin, Destroying, Compound for	J. B. Hyde	50,006
Vessels	J. P. Curry	48,795
Vessels, Centreboards for, Windlass for operating	J. C. and H. W. Hamilton	46,351
Vessels, Decks of, roofs, &c., Applying coverings to	J. Hall	48,060

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Vessels, Deck and side lights for	C. Perley	48,836
Vessels, Navigable, Connection of the gaff of the mast of	C. R. Fisher	47,044
Vessels, Oil, Coating for	S. Gwynn	48,552
Vessels, Sheathing for	H. Fields	51,110
Vessels, Ships, or other, Cooling and ventilating	D. E. Somes	46,593
Vessels, Steam, Ejecting refuse matter from	J. Palmer	50,153
Vessels, Steam, Ventilating apparatus for	J. G. Woodward	50,434
Vessels, Sunken, Cargo of, Discharging the	P. E. Falcon	49,026
Vessels, Sunken, Raising	T. Bell	46,333
Vessels, Sunken, Raising	A. B. Page	48,091
Vessels, Sunken, Raising	G. W. Fuller	49,342
Vessels, &c., Sunken, Raising, Self-inflator for	T. P. Edson	48,539
Vessel sails, Lazy jack for	D. R. Arnold	47,178
Vessel for boiling	W. Kroeger	47,025
Vessel for holding petroleum	J. M. Batchelder	46,206
Vessel for holding petroleum	J. W. Barnum and P. M. McNoah	48,891
Vessel for preserving butter or other substances	J. G. Staunton	45,763
Vessel for the reception and transportation of night-soil	R. A. Smith	48,847
Vessels-of-war	J. S. Underhill	46,037
Vessels and steamboats, Landing platform for	N. W. Wheeler	47,482
Vises	A. H. Brainard	45,693
Vises	J. Renshaw	48,822
Vises	H. B. Dart	49,094
Vise, Horseshoe calking	F. B. Curtis	49,388
Vinegar	C. Wesener	50,526
Vinegar	H. Eckert	51,159
Vinegar, Manufacture of	M. Rino	46,943
Violins, damper for	A. F. Braun	48,648
Vulcanite, Alloys of aluminum with, Combination of	N. C. Fowler	46,347
Vulcanite or hard rubber	D. D. Parmelee	48,992
Vulcanite and other materials, Aluminum with, Combining	N. C. Fowler	46,230
W.		
Wadding, Surface sizing, &c., Machine for	S. Baxendale	46,065
Wagons	J. Dowd	48,381
Wagons, Freight, Hindboards of, Shipping and unshipping	F. W. Bishop	49,966
Wagons, Hay, Loading and unloading	S. Rogers	45,865
Wagons, Hay-racks for	W. M. Thomas	49,455
Wagons, Light	H. L. Isham	49,112
Wagons, Spring seat for	T. J. Alexander	50,785
Wagons, Tailboards of, Releasing the	C. Dreher	49,734
Wagons, unloading attachment for	J. H. Stevens	49,006
Wagon boxes, skeins of, Casting	T. Considine	50,340
Wagon hubs, Boring	F. Bremerman	51,688
Wagon shaft shackles	F. Dickinson, jr.	50,918
Wagon shoe-locks	A. Hamilton	51,585
Wall builders and stump extractors	G. W. Packer, jr	49,647
Wardrobe bedstead	J. Eby	47,197
Warehouse, Wharf and pier	J. B. Hyde	49,475
Warming apparatus, Steam	C. A. Wilson	49,332
Warming apparatus, Steam	C. A. Wilson	50,294
Warps, Dressing and beaming	W. Potter and A. W. Sheldon	51,082
Warp dressing and weaving, Expansible reed for	A. J. Nichols	46,381
Washboards	N. Homer	47,206
Washboards	L. B. Hart	48,811
Washboards	J. S. Lash	49,635
Washboards	C. H. Warren and A. C. Baldwin	51,634
Washboards, Attachment for	C. H. Hudson	46,361
Washers, Cutting, Tool for	C. A. King and C. A. Smith	50,600
Washers, street	J. McClelland	46,572
Washing, cooling, &c., Apparatus for	S. S. Fitch	51,164
Washing apparatus	C. C. H. Glidden	49,748
Washing compound	R. W. Chappell	49,977
Washing dishes	L. A. Alexander	51,000
Washing machine	G. W. Sayre	45,940
Washing machine	S. Gambell	45,990
Washing machine	G. N. Bolles	46,175
Washing machine	O. Reeves	46,265
Washing machine	E. Burke	46,327
Washing machine	L. Marble	46,686
Washing machine	W. H. Perry and W. Woodworth	46,935
Washing machine	S. S. Putnam	47,038
Washing machine	B. Wright	47,062
Washing machine	J. H. Duck and E. S. Gould	47,167
Washing machine	A. F. Lapham	47,433
Washing machine	J. T. Mudge	47,445
Washing machine	E. Hodgkins	47,640
Washing machine	H. L. Buckwater	47,678
Washing machine	E. Culver	47,802
Washing machine	H. Brown	47,924
Washing machine	D. Davidson	47,934
Washing machine	J. Johnson	48,071
Washing machine	E. Douglass	48,263

Invention or Discovery.	Name of Patentee.	No.
Washing machine	J. Danner	48,375
Washing machine	W. R. Hill	48,402
Washing machine	J. F. Melcher	48,424
Washing machine	M. A. Richardson	48,442
Washing machine	LeRoy S. Starrett	48,458
Washing machine	E. Gordon	48,550
Washing machine	S. P. Mecay	48,576
Washing machine	H. E. Smith	48,596
Washing machine	J. Heinlein	48,683
Washing machine	S. S. Putnam	48,718
Washing machine	O. Reeves	48,837
Washing machine	V. R. David	48,865
Washing machine	I. A. Beals	48,893
Washing machine	W. Beaton	48,894
Washing machine	J. H. Monsees	49,135
Washing machine	J. Champlin	49,229
Washing machine	J. E. Atwood	49,360
Washing machine	M. Pike	49,436
Washing machine	J. Adams	49,490
Washing machine	J. B. Winchell	49,672
Washing machine	L. E. Ranson	49,920
Washing machine	J. Davenport	50,100
Washing machine	W. Jackson and F. Robinson	50,131
Washing machine	T. J. Price	50,162
Washing machine	C. C. Phelps	50,207
Washing machine	B. S. Fletcher	50,234
Washing machine	A. B. Clark	50,454
Washing machine	J. B. Ghormley	50,464
Washing machine	C. Parsons and B. S. Dane	50,621
Washing machine	H. E. Smith	50,638
Washing machine	J. B. Fisher	50,810
Washing machine	J. Keane	50,873
Washing machine	J. K. Dugdale	50,922
Washing machine	J. Welding	50,973
Washing machine	R. P. Burlingame	51,015
Washing machine	F. A. Hunt	51,185
Washing machine	G. W. Large	51,197
Washing machine	D. and J. T. Leighton	51,199
Washing machine	A. C. Gallahue	51,304
Washing machine	G. M. Harris	51,313
Washing machine	M. Gardiner, sr	51,444
Washing machine	P. Killin	51,460
Washing machine	M. Huiet	51,590
Washing machine	M. Huiet	51,591
Washing machine	D. Kellogg	54,595
Washing machine, Roller for	J. Danner	50,802
Washing machine, Roller of, Covering	R. B. Hugunin	50,712
Washing machine and wringer	N. B. Webber	49,684
Washing and wringing machine	E. Springer	50,401
Washing and wringing machine	R. A. Gawler	51,580
Washing roller	J. E. Atwood	49,359
Washing the blankets of printing machines	T. W. Clark	48,053
Washstand appliances for one-armed persons	G. Dietrich	48,533
Watch	C. W. Fogg	46,343
Watches	G. C. Martin	47,116
Watches	S. Hittel	48,942
Watches, Toy	L. Flagg and G. D. Briggs	50,699
Watches, Winding and setting	G. Goudelfinger and J. L. Bichet	47,369
Watches, Winding and setting	C. E. Laederich	47,370
Watches, Winding and setting	F. A. Giles	47,412
Watches, Winding and setting	H. Rothfelder	48,725
Watches, Winding and setting	F. A. Giles	49,397
Watch escapement	G. P. Reed	49,155
Watch escapement	L. Billou	51,414
Watch mainsprings, Contracting barrels of	A. S. Clackner	49,978
Watch regulator	G. P. Reed	49,154
Watch safes	C. N. Devereux	49,863
Water, Cooling, in wells	D. E. Somes	50,399
Water apparatus, Portable	J. F. Rochow	48,839
Water-boiling apparatus	H. W. Horton	50,586
Water conductors, Cut-off for	J. Ash	49,960
Water coolers and purifiers	A. J. Gibson and G. Emerson	46,556
Water-fall head dress for ladies	P. Walter	46,961
Wearing apparel, Clasps for	F. Wood	46,288
Weather prophets	A. C. Rand	51,477
Weather strips	A. M. Penisston	50,490
Weather strip and stop	J. G. C. Horton	51,049
Weaving button-holes in fabrics	L. J. Knowles	46,679
Weaving fabrics with button-holes therein	J. Connor	47,151
Weaving three-ply fabrics, Jacquard	J. S. Ferguson	46,892
Weaving and warp dressing, Expansible reel for	A. J. Nichols	46,381
Weighing apparatus	B. Churchill	49,377
Weighing apparatus	O. S. Bliss	51,416
Weighing attachment for penholders and pencils	D. A. B. Savy	49,059

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Weights, Hoisting and lowering	W. C. McGill	47,969
Weight-lifting apparatus	D. P. Butler	48,050
Weight-pulling apparatus	D. P. Butler	48,051
Welding, Composition for	G. Harpst	50,355
Wells, Artesian, Boring	T. J. Lovegrove	48,343
Wells, Artesian, Boring	W. A. Fisher	48,388
Wells, Artesian, Boring apparatus for	J. Theaker	50,643
Wells, Artesian, Boring machine for	G. W. Wicks	48,004
Wells, Artesian, Boring tools for	H. H. Daniels	47,804
Wells, Artesian, Boring tools for, Operating	J. Ross	50,777
Wells, Artesian, Drilling	S. J. Wadsworth	48,605
Wells, Artesian, Operating	E. Huson	50,934
Wells, Artesian, Packing for	S. Swartz	48,599
Wells, Boring	C. E. Foster	46,968
Wells, Boring	C. A. Saxe	47,225
Wells, Boring	M. Campbell and J. H. Cole	48,515
Wells, Boring	P. J. Hynes	51,592
Wells, Boring, Devices for	J. Donnell	47,400
Wells, Deep, Packing	A. H. Fowler and E. J. Morgan	51,167
Wells, Deep, Packing for	F. Martin	49,903
Wells, Deep, Packing of pistons in, Adjusting	E. D. Brown	50,898
Wells, Deep, Piston packing for	C. H. Jackson	49,759
Wells, Deep, Tubular apparatus for	M. J. Dickerson and J. Stuber	50,919
Wells, Oil	G. T. Parry	48,994
Wells, Oil, Deep, Elastic packing for the exterior of pumps in	J. Moulton	46,860
Wells, Oil, Electro-magnets for	M. Knickerbocker	51,729
Wells, Oil, Heating by electricity	G. T. Parry and S. S. Warner	48,584
Wells, Oil, Operating	P. Casamajor	50,902
Wells, Oil, Operating	P. Casamajor	50,903
Wells, Oil, Packing for	J. R. Cross	50,910
Wells, Oil, Packing tubes	R. A. Wilder	50,194
Wells, Oil, Testing	J. C. Lyons	46,124
Wells, Oil, Tool for removing obstructions in	W. Bowden	50,896
Wells, Oil, Treating, to remove paraffine, tar, &c	J. Frazier	47,410
Wells, Oil, and other, Tubes for caves in	J. A. Patterson	46,818
Wells, Sinking	B. Mudge	50,614
Wells, Sinking	R. H. St. John	50,967
Wells, Sinking	E. Ashton and G. W. Galpin	51,382
Wells, Sinking and tubing	G. D. Pettingill and L. H. Mericle	50,949
Wells, Water in, Cooling	D. E. Somes	50,399
Well borers	G. L. Witsill and E. Burke	46,517
Well borers	W. Hyde	46,673
Well borers	J. Greives	48,809
Well-boring apparatus	C. E. Foster	46,420
Well-boring apparatus	C. E. Foster	46,844
Well-boring apparatus, &c	H. Howson	46,849
Well-boring apparatus	T. J. Parke	50,881
Well-boring devices	A. A. Wilson	47,249
Well tubes, Deep, Sinking	H. R. and M. T. Barnes	49,362
Welt machine	B. U. Lyon	49,349
Welt trimmer	J. B. Reed	51,519
Whales, Killing, Bomb-lance for	S. Barker	46,437
Whales, Killing, Bomb-lance for	E. Pierce	49,548
Wharf, pier, and warehouse	J. B. Hyde	49,475
Wheels	J. Stoliker	50,425
Wheels, Anti-friction, for belt gearing	D. Eldridge	49,614
Wheels, Car	S. J. Seely	46,145
Wheels, Car	J. Harris	50,579
Wheels, Car, Annealing	H. W. Moore	51,338
Wheels, Car, Lubricating	W. Youmans	48,230
Wheels, Car, Railroad	J. D. Murphy	47,780
Wheels, Car, Upon axles, Adjusting	H. Helm	50,823
Wheels, Carriage	J. Goodman	46,524
Wheels, Carriage	J. Raddin	48,207
Wheels, Carriage	C. S. Winchester	51,251
Wheels, Carriage	J. Scott	51,756
Wheels, Carriage, Felloe-clamp and spoke-support for	J. C. Plumer	51,620
Wheels, Caster, Glass	J. B. Capewell	50,795
Wheels, Corundum, Making	E. H. Danforth	48,160
Wheels, Feed, as substitute for ratchets or pawls	O. C. Phelps	47,126
Wheels, Fly	D. Eldridge	46,890
Wheels, Friction, and oil chamber	A. J. Ambler	46,867
Wheels, Paddle	B. G. Martin	48,771
Wheels, Paddle	C. A. Kirkpatrick	48,956
Wheels, Paddle	W. Choate	50,417
Wheels, Paddle, Feathering	J. A. Keene	45,835
Wheels, Paddle, Feathering	A. Gilman	49,102
Wheels, Paddle, Feathering	J. Burson	49,226
Wheels, Paddle, Feathering	M. G. Collins	50,338
Wheels, Paddle, Feathering	S. F. Gates	50,702
Wheels, Paddle, Feathering	E. Haight	50,817
Wheels, Propelling, for river and canal boats	H. Fenton	48,541
Wheels, Spinning	J. M. Flood	51,532
Wheels, Friction, for rotary ploughs	L. S. Fithian	47,005

Invention or Discovery.	Name of Patentee.	No.
Wheels, Wagon	J. M. Howe	48, 687
Wheels, Wagon	B. Pearson	51, 747
Wheels, Wagon, Dressing	S. T. Jackson	50, 130
Wheels, Wagon, Spokes in, Setting	R. Walker	51, 765
Wheels, Water	J. Sanford	45, 755
Wheels, Water	R. Stewart	45, 875
Wheels, Water	J. F. Letellier	46, 367
Wheels, Water	J. H. Wooster	46, 429
Wheels, Water	G. F. Wright	48, 613
Wheels, Water	S. J. Kindleberger	48, 694
Wheels, Water	T. Rose	48, 724
Wheels, Water	J. E. Stevenson	48, 737
Wheels, Water	J. A. and A. Allen	48, 781
Wheels, Water	H. Wenger	48, 855
Wheels, Water	L. S. Fairchild	48, 866
Wheels, Water	A. Jamison	49, 114
Wheels, Water	J. M. Clark	49, 380
Wheels, Water	C. D. Wright	49, 578
Wheels, Water	U. H. Goble	50, 928
Wheels, Water, Turbine	G. Talbot	51, 760
Wheels, Wind	L. Reese	47, 039
Wheels, Wind	H. O. Cook	49, 485
Wheels, Wind	J. E. Hubbard	50, 003
Wheels, Wind	A. H. Hanson	50, 705
Wheels, Wind	E. F. Hough	50, 825
Wheel for axles	C. J. Crane	50, 655
Wheels for the propulsion of vessels in shoal water	O. Olds	48, 715
Wheels and pulleys to shafts, Fastening	Z. Wheeler	50, 761
Wheelbarrows	N. C. Sanford	48, 101
Whiffletrees	J. Elder	48, 163
Whiffletrees	J. H. Littlefield	48, 416
Whiffletrees	T. B. Markillie	49, 285
Whiffletrees	I. D. Flanagin	50, 347
Whiffletrees	G. Woeber	50, 763
Whiffletrees, Rotating	C. C. Lee	51, 597
Whiffletrees, Snap-hook for	C. W. Saladee	51, 089
Whiffletree attachment	J. C. Gardner	51, 712
Whiffletree irons	W. M. Bryant	47, 894
Whiffletree rackets and neck yokes	C. C. Holman	50, 124
Whiffletree of vehicles, Traces to, Attaching	E. Brown	50, 682
Whip sockets	J. Lake	46, 680
Whip sockets	J. F. Brewer and T. E. Stow	47, 277
Whip socket fastening	H. W. Catlin	46, 215
Whiskey, Distilling and rectifying	E. F. Prentiss and R. A. Robertson	48, 436
Whistle, Steam	C. Kupferle and J. H. Ward	46, 910
Whistle, Steam	A. Fitts	48, 921
Whiting, Waste, Utilizing	H. W. Gray	49, 518
Wicks, Lamp	P. Noyes	51, 611
Wicks, Lamp, Trimming	H. F. Bond	45, 692
Wicks, Making	A. Meucci	46, 607
Wicks, Rendering, incombustible	E. P. Furlong and E. M. Lang	47, 100
Wick scraper	C. W. Cahoon	47, 254
Wick trimmer	C. L. Topliff	48, 743
Wicks of lanterns, Regulator for the	H. W. Bleyer	48, 254
Winders for oyster diggers	H. S. Lawson	46, 912
Windlass	P. H. Jackson and S Eddy	46, 110
Windlass	W. C. McGill	46, 811
Windlass	P. H. Jackson	48, 282
Windlass, Screw, and capstan	H. Heitman and J. Radican	47, 104
Windlass for operating centre-boards for vessels	J. C. and H. W. Hamilton	46, 351
Windlass for tightening ships' standing rigging	J. G. Codmus	47, 164
Window	S. Wales	48, 749
Window	W. Maurer	49, 426
Window, Car, Ventilating	G. Mann, jr	50, 831
Window, Double	T. S. Lambert	47, 837
Window, Ventilating, for railroad cars	R. Monroe, E. Stone, and E. St. John	51, 607
Window blinds, Locking and stopping	J. Wetzell	48, 003
Window blind fastenings	A. C. Arnold	50, 546
Window blind rod, Wiring	D. Kelley	49, 888
Window cords, Sash to, Attaching	H. J. Adams	49, 489
Window frame and sash	A. B. Shaw	50, 393
Window shade adjuster	E. T. Higham	46, 050
Window sashes, Hoisting and lowering	J. M. Merrymon and K. Ferguson	49, 134
Window sash, Metallic	C. Neer	46, 305
Window sash, Operating	J. R. Baker	48, 889
Window sash, Spring latch for	W. Toshach	48, 463
Window sash lock	A. C. Arnold	50, 321
Window sash supporters	J. G. Perry	45, 747
Window sash supporters	J. H. Williams	45, 784
Window shutter	G. J. Colby	48, 908
Window stops, Adjustable	W. Shaw	49, 660
Window and doors, Rendering water-tight	W. C. Fuller	47, 368
Window and door fastener	H. Gordon	51. 059
Wine, Age to, Imparting	J. Searle	48, 728

Invention or Discovery.	Name of Patentee.	No.
Wires, Bedstead	E. Craft	46,967
Wires, Coupling conducting	G. W. Beardslee	47,918
Wires, Covering	T. S. Sperry	47,343
Wires, Line, for telegraphs	M. G. Farmer and G. F. Milliken	47,940
Wires, Rolling	G. Bedson	49,598
Wires, Skirt	T. S. Sperry	46,718
Wires, Skirt, Covered, Sizing and finishing	W. E. Frost	48,764
Wires, Skirt, Covered, Sizing and finishing	W. E. Frost	48,765
Wires, Skirt, Covered, Sizing and finishing	W. E. Frost	48,766
Wires, Skirt and other, Braiding machine for covering	O. R. Burnham	47,487
Wires, Telegraph, Composition for insulating	S. C. Bishop	46,750
Wire cloth, Crimping	W. Zerns	49,356
Wire cutting machine	L. W. Johanning, jr	47,956
Wire fork for toasting, &c	T. G. Harrold	46,235
Wire hurdles for loom harness	M. Finkle	49,251
Wire pointing machine	C. Jillson	47,954
Wire pointing machine	C. Jillson	47,955
Wire pointing machine	C. Jillson	48,283
Wire straightening machine	G. I. Washburn	48,608
Wire in the coil, Pointing	C. Jillson	46,242
Wiring window blind rods	D. Kelley	49,888
Wood, applying colors to	E. Knabeschuck	51,194
Wood, Bending	S. A. King	50,601
Wood, Bending	G. Kriebel	50,602
Wood, Burnishing and polishing	G. Bricker, sr	49,192
Wood, Carbonizing	P. Hugon	48,882
Wood, Coloring and polishing	E. Knabeschuck	51,462
Wood, Embossing	H. May	50,608
Wood, Grinding	R. A. Adams	51,774
Wood, Pine, Obtaining spirits of turpentine, oil, rosin, and other products from.	A. H. Emery	46,092
Wood, Pores of, Composition for filling	D. W. C. Cooley, C. F. Smith, and C. E. Bradley.	49,382
Wood, Pores of, Filling the, Composition for	E. S. Pixley	50,384
Wood, Preserving	L. S. Robbins	47,132
Woods, &c., Preserving	G. Palmer	49,146
Wood, Resinous, Extracting turpentine and other products from.	D. Hull	48,406
Wood, Splitting	W. L. Williams	51,506
Wood, Straw, &c., Pulping	J. W. Dixon	51,704
Wood, straw, and other vegetable fibres, Treating	J. W. Dixon	51,705
Wood-bending machine	J. P. Lelezelter	46,479
Wood-bending machine	F. Smith	46,591
Wood-bending machine	S. Keeler	48,181
Wood-bending machine	M. F. Connett	48,661
Wood-bending machine	P. Hurm	49,109
Wood-bending machine	T. D. Roberts	51,353
Wood-bending machine	J. E. Crane	51,562
Wood gear, Cutting	C. R. James	49,881
Wood gear, Cutting	J. Jackson	51,458
Wood-splitting machine	J. H. Hildebrandt	47,019
Wood-splitting machine	B. F. Perry	49,913
Wood from decay, Preserving	A. Hamar	48,636
Wood and oil barrels, Preserving, Composition for	C. Brandenburg	46,873
Wooden piles, Surface of, Protecting the	L. J. Henry	46,049
Wool, Fleeces of, Putting up	S. G. Chase	50,450
Wool, Lubricant for	B. A. Earle	46,551
Wool, Lubricating material for	H. Bottomley	48,509
Wool, Oiling	B. H. Lightfoot	46,006
Wool, Oiling	J. Kelley	47,427
Wool, Oiling	B. A. Earl and H. Holcroft	47,938
Wool, Oiling	J. Shinn	48,348
Wool, Oiling	M. J. Roberts	48,351
Wool, Oiling, in carding machines	G. S. Harwood	46,104
Wool, Oiling, in carding machines	J. W. Hussey	46,189
Wool, Oiling, in carding machines	J. Shinn	46,194
Wool, Oiling, in carding machines	J. Eccles	47,767
Wool, Refuse, Preparing for use	L. T. Stiastny	45,768
Wool, Washing	J. A. Clark	46,078
Wool, Washing	J. Petrie, jr., and J. Kenworthy	46,306
Wool-washing machine	C. G. Sargent	50,961
Wool or hair from animals, Clipping	C. W. Emery	45,821
Wool and hair from animals, Clipping	C. W. Emery	46,226
Wrench	G. Meader	45,931
Wrench	A. Y. McDonald	47,067
Wrench	J. White	49,208
Wrench	L. Jordan and L. E. Smith	50,364
Wrench	J. P. Lindsey	51,465
Wrench	J. W. Penney and E. M. Thurston	51,617
Wrench, Screw	H. W. Love	49,128
Wringer, Clothes	D. Lyman	50,482
Wringers, Rollers for, Covering	R. B. Hugunin	47,827
Wringers, Washing-machine	J. T. Hagerty	49,519
Wringer and scrubbing-brush mop	L. Frey and J. Hahn	50,701
Wringer and washing machine	N. B. Webber	49,684

Invention or Discovery.	Name of Patentee.	No.
Wringing machine	G. N. Bolles	46,046
Wringing machine	C. H. Amidon	47,079
Wringing machine	M. Harris and R. G. Bush	48,933
Wringing machine	J. O. Couch	49,025
Wringing machine	J. N. Rose	49,043
Wringing machine	J. E. Atwood	49,361
Wringing machine	J. D. Burdick	49,372
Wringing machine	J. O. Couch	50,531
Wringing and washing machine	E. Springer	50,401
Wringing and washing machine	R. A. Gawler	51,580
Wrist pins, Making	L. Saarback	49,307
Writing, Training the muscles in	E. G. Squires	46,827
Y.		
Yarns, Felted	J. H. Bloodgood and M. A. Johnson	49,367
Yarns, Printing	E. J. Stephens and H. E. Green	46,829
Yarns, Spinning, Jacks and mules for	J. Goulding	47,547
Yokes, Ox	J. H. Whitney	46,742
Yokes, Ox	E. S. Woodford	47,263
Z.		
Zinc, Manufacture of	J. Webster	46,198

REISSUES—1865.

A.		
Air, Carburetting	H. L. McAvoy and E. S. Hutchinson	2,069
Amalgamators	T. Varney	1,924
Articles of irregular form, Forming and punching	L. Dodge	2,084
Augers	R. Jennings	2,081
B.		
Bark, Tan, Extracting	S. W. Pingree	1,922
Bark, Tan, Leaching and preparing extracts from	W. W. Allen and O. Warren	1,844
Barrels, Coating, to render them oil-tight	The U. S. Barrel Coating Company	1,860
Barrels, Preparing, to contain petroleum, coal oil, &c	L. S. Robbins	1,847
Barrel machinery	W. Trapp, jr	1,946
Barrel machinery	W. Trapp, jr	1,947
Bed bottom, Folding	F. C. Payne	1,941
Bell, Door	H. H. Abbe	2,134
Blacking, Slate surface, Composition for	I. N. Pierce	2,095
Boilers, Brewer	A. Hammer	2,001
Boilers, Steam	E. N. Dickerson	1,993
Boilers, Steam	H. C. Sergeant	2,082
Boilers, Steam	R. E. Rogers and G. Black	2,130
Boiler tubes, Sealing	P. E. Garvin	2,080
Bolts	W. J. Clark	1,917
Bolt-heading machine	J. Minter	2,093
Book, Covers of, Embossed	W. T. Anderson and H. S. Archer	2,089
Bottoms on sheet metal ware, Casting	L. J. Worden	1,896
Boxes, Cartridge	R. A. Chesebrough	2,094
Boxes for hats and bonnets	O. A. Dailey	2,040
Brakes, Car, Railroad	J. Davis	1,857
Brakes, Pulley, Self-acting	J. Jochum	2,020
Brewing	A. Hammer	1,905
Brick machine	J. Hotchkiss	2,121
Bridges, Truss	R. Comins	1,884
Bridges, Truss	A. D. Briggs	2,070
Broom	C. L. W. Baker	2,059
Burner, Petroleum, for cooling, &c	J. P. Hayes	2,120
Buttons	C. Smart	2,006
Button-holes, Incising, embossing, and printing articles of wearing apparel.	S. S. Stone	2,024
C.		
Cans, Fruit	W. W. Lyman	1,920
Cannons, Wrought	H. Ames	1,882
Cars, Railroad	L. Myers	1,910
Cars, Railroad, Roof for	A. P. Winslow	2,051
Cars, Railroad, for transporting oil and other liquids	J. F. Keeler	2,031
Carpet-bag frames	S. Lagowitz	2,035
Cartridge box	E. Blakeslee	1,861
Cartridge boxes	R. A. Chesebrough	2,094
Cartridge boxes, Making	E. Allen	1,949
Cartridge cases, Making	E. Allen	1,948

Invention or Discovery.	Name of Patentee.	No.
Cartridge cases, Metallic, Loading	C. H. Lavis	
Cases, rooms, &c., for preserving and transporting articles of food and other substances, Construction of.	D. E. Somes	1,909
Chair, Spring-back	R. H. Staples	1,986
Chair bottom or back	J. P. Tice	2,016
Chair seats	H. J. Seymour	1,873
Cigars, Mouthpiece for	J. Ball	2,113
Chucks, Self-centering	G. H. and J. Y. Clark	2,104
Clover, Hulling	E. A. Blackwell	1,868
Cocks	N. Jenkins	1,879
Cocks, Gas	J. G. Leffingwell	1,931
Coffee and tea-pots	E. B. Manning	2,013
Coffee and tea-pots	E. B. Manning	2,075
Collars, Paper, Enamelled	J. H. Hoffmann	2,034
Collars, Paper, Folding	G. W. Ray and V. N. Taylor	2,056
Collars, Paper, Folding	G. W. Ray and V. N. Taylor	2,110
Collars, Shirt	W. E. Lockwood	1,867
Collars, Shirt	W. E. Lockwood	1,926
Collars, Shirt	W. E. Lockwood	1,927
Collars and cuffs, Ladies'	W. E. Lockwood	1,980
Collars and cuffs, Ladies'	W. E. Lockwood	1,981
Collars and cuffs, Ladies'	W. E. Lockwood	1,982
Collars and cuffs, Ladies'	W. E. Lockwood	1,983
Colors, Dye, Manufacture of	M. Howe and H. R. Stevens	1,958
Colors, Dye, Manufacture of	M. Howe and H. R. Stevens	1,959
Combs, Curry	C. W. Saladee	1,854
Composition of matter, Improved	L. Francis and C. H. Loutrell	1,885
Composition of matter, Improved	L. Francis and C. H. Loutrell	1,886
Composition of matter, Improved	L. Francis and C. H. Loutrell	1,887
Condensers	W. A. Lighthall	1,878
Condensers, Water, Portable	W. A. Lighthall	1,879
Cooking, &c., Petroleum burners for	J. P. Hayes	2,120
Cork, Cutting	P. Holmes	2,030
Corn shellers	T. D. Burrall	2,083
Cotton pickers	G. A. Howe	2,137
Cotton pickers	G. A. Howe	2,138
Cuffs and collars, Ladies'	W. E. Lockwood	1,980
Cuffs and collars, Ladies'	W. E. Lockwood	1,981
Cuffs and collars, Ladies'	W. E. Lockwood	1,982
Cultivators	R. A. Leeper and Z. B. Kidder	1,996
Curing provisions	D. E. Somes	2,096
Curtain fixture	E. T. Briggs	2,026
Cutter, Meat	R. V. Jones	2,055
Cutter, Straw	D. Porter and K. Smith	1,892
Cutter, Straw	H. K. Parsons	1,899
Cutters, Straw	J. Mumma	1,906
Cutters, Straw	D. W. C. Cumings	1,911
Cutters, Straw	W. Gale and B. B. Belcher	1,977
Cutters, Straw	W. and A. Gale	2,119
Cutters, Straw	W. Gale and B. B. Belcher	2,127
D.		
Detectors, Time, Watchman's	J. E. Burk	2,054
Dextrine, Sugar, &c., Manufacture of	T. A. Hoffmann	1,995
Dies for carriage bolts	W. J. Clark	1,916
Dies for stamping rings	O. M. Draper	2,063
Drills, Grain, Seed-covers for	J. S. Gage	2,041
Drills, Wheat	J. B. Crowell	2,011
Dye colors, Manufacture of	M. Howe and H. R. Stevens	1,958
Dye colors, Manufacture of	M. Howe and H. R. Stevens	1,959
E.		
Elevators, Hay	F. F. Fowler	1,869
Elevators, Hay	F. F. Fowler	1,870
Engines, Carding	L. O'Brien	1,865
Engines, Hot	S. Wilcox	1,942
Engines, Steam	F. P. Dimpfel	1,877
Engines, Steam	E. D. Barrett and H. P. Bigelow	2,060
Extracts, Preparing and Leaching tan bark	W. H. Allen and O. Warren	1,844
F.		
Fats and oils, Rendering	C. E. Gray	2,049
Fibres from waste felted fabrics, Obtaining	The American Water-proof Comp'y	2,086
Files, Cutting	M. D. Whipple	1,881
Fire-arms, Breech-loading	W. C. Hicks	1,952
Fire-arms, Breech-loading	B. S. Roberts	2,067
Fire-arms, Breech-loading	B. S. Roberts	2,068
Fire-arms, Magazine	E. Stabler	1,965
Fire-arms, Revolving	R. White	1,928
Fire-arms, Revolving	W. H. Elliot	1,936
Fire-arms, Revolving	W. H. Elliot	1,937

Invention or Discovery.	Name of Patentee.	No.
Fire-arms, Revolving	W. H. Elliot	1,938
Fire-arms, Self-loading, Magazine in	G. W. Hughes	1,943
Fireplaces	C. A. Littlefield and D. Boyle	2,074
Folder, Shirt-bosom	J. Stevens	2,097
Food, Concentrated, Preparing	J. H. Schenck	1,945
Food and other substances, Construction of rooms, cases, &c., for preserving and transporting articles of.	D. E. Somes	1,909
Forks, Hay, Elevating	T. F. Hisert	1,939
Forming and punching articles of irregular forms	L. Dodge	2,084
Fountain, Soda	S. R. Sylvester	2,033
Frames, Carpet-bag	S. Lagowitz	2,035
Frames, Roving	G. Chatterton	1,950
Fruit, &c., Preserving, Houses for	B. M. Nyce	2,036
Fruit and other perishab e substances, Preserving	B. M. Nyce	1,960
Fruit and other perishable substances, Preserving	B. M. Nyce	2,037
Fruit and other perishable substances, Preserving	B. M. Nyce	2,038
Funnel and measure, Combined	S. R. Dummer	2,012
Furnaces, Boiler, Steam	J. Amory	2,058
Furnaces for decomposing and desulphurizing ores	R. Spencer	2,021
Furnaces for treating ores by superheated steam	The Hagan Manufacturing Co. and W. E. Hagan.	1,988
G.		
Gases and oils, Condensing and separating	W. G. W. Jaeger	1,902
Gates for water wheels	A. L. Stout, W. M. Mills, and J. Temple.	2,062
Glasses, Looking, or mirrors	L. P. Angenard	1,883
Gold and silver, Amalgamating and collecting	H. W. Adams and S. S. Worthington	2,028
Governors, Engines, Steam	J. Judson	1,889
Governors, Engine, Steam	T. Silver	2,039
Governors, Engine, Steam	R. W. Gardner	2,064
Grain binders, Automatic	R. D. Brown	1,875
Grain separators	E. and H. and M. E. Montgomery	2,098
Grates for furnaces	A. Winterburn	2,078
Gums and palates, Artificial	J. A. Cummings	1,848
Gums and palates, Artificial	J. A. Cummings	1,904
H.		
Harvesters	R. Hoffheins	1,888
Harvesters	W. P. Penn	1,961
Harvesters	E. Jones	1,964
Harvesters	C. Wheeler, jr	1,967
Harvesters	C. Wheeler, jr.	1,968
Harvesters	C. Wheeler, jr.	1,969
Harvesters	C. Wheeler, jr.	1,970
Harvesters	C. Wheeler, jr	1,971
Harvesters	C. Wheeler, jr.	1,972
Harvesters	C. Wheeler, jr.	1,973
Harvesters	C. Wheeler, jr.	1,974
Harvesters	C. Wheeler, jr.	1,975
Harvesters	N. Cogswell and W. H. W. Cushman	2,007
Harvesters	R. Dutton	2,047
Harvesters	R. Hoffheins	2,102
Harvester, Clover and grass seed	W. N. Whiteley, jr	2,009
Harvester, Grain and grass	A. Whiteley	2,017
Harvester, Raking attachment to	R. D. Brown	1,876
Harvester, Raking attachment to	R. D. Brown	1,963
Harvesting machines	J. Reilly	2,099
Hides and skins, Tanning	S. H. Kennedy and H. L. Elder	1,849
Hides and skins, Tanning	S. H. Kennedy and H. L. Elder	1,955
Hoisting machines	W. G. Brower	1,990
Hoisting machines	W. Miller	2,003
Hoisting machines	W. Miller	2,065
Hoisting machines	W. Miller	2,066
Hook Coat and hat	J. T. and H. A. Pratt	1,997
Hook, Tackle	J. W. Norcross	2,042
Horseshoes	H. Burden	1,998
Houses for preserving fruits, &c	B. M. Nyce	2,036
Hulling and scouring machines	O. P. Stevens	1,923
Hydrants	C. L. Stacy	1,985
I.		
India-rubber rolls to metallic shafts, Fastening	G. J. Colby	1,992
Iron, Manufacture of	J. D. Williams	2,073
Iron, Refining	C. Shunk	2,118
Irons, Smoothing	W. F. Shaw	1,859
L.		
Ladder, Step	J. H. Balsley	2,010
Lamps	J. E. Ambrose	1,900
Lamps, Locomotive	J. Mayhew and T. S. Ray	2,128

Invention or Discovery.	Name of Patentee.	No.
Lamps, Locomotive	I. A. Williams	2,133
Lantern	J. H. Irwin and J. F. Griffin	1,850
Lard and tallow, Rendering	C. E. Gray	2,048
Latches, Knob	R. L. Webb	2,131
Lathes, Turning	N. Harper	1,994
Lathe chucks	W. A. Rielly	2,053
Leather, Splitting	J. A. Safford	2,123
Leather-splitting machine	J. A. Safford	1,956
Leather, Treating	E. A. Ashcroft, J. H. Johnson, and A. S. Moore.	1,845
Legs, Artificial	D. D. Parmelee	1,907
Legs, Artificial	D. D. Parmelee	1,908
Light, Artificial, Rendering the same as daylight	N. H. Gillet	1,918
Lightning arrester for telegraphs	G. A. Stearns	2,043
Locks, Row	J. W. Norcross	1,846
Looms	M. A. Forbush and G. Compton	1,901
Looms	C. Duckworth	2,018
Looms	C. Duckworth	2,019
M.		
Mash-tun	A. Hämmer	2,002
Matter, Composition of, Improved	L. Francis and C. H. Loutrell	1,885
Matter, Composition of, Improved	L. Francis and C. H. Loutrell	1,886
Matter, Composition of, Improved	L. Francis and C. H. Loutrell	1,887
Mattress, Spring	S. P. Kittle	2,092
Measure and funnel, Combined	S. R. Dummer	2,012
Meat mincer	A. W. Hale	2,136
Metal, Sheet, Cleaning	E. A. Harvey	2,116
Metal-ware, Sheet, Casting bottoms on	L. J. Worden	1,896
Milk, Condensing	G. Borden	2,103
Mills, Hominy	R. E. Richardson	1,919
Mills, Saw	J. K. Knowlton	2,072
Mills, Stamp, and ore crushers, Collecting the dust from	J. Brodie	2,090
Mirrors or looking glasses	L. P. Angenard	1,883
Mortising machine	S. S. Bartlett and T. H. Dodge	1,852
Moulds, Candle	W. Humiston	2,108
Mouth-piece for cigars	J. Ball	2,113
Mowing machines	R. Dutton and R. L. Allen	2,079
Music, Keyed instrument of	F. Peabody	1,866
N.		
Naval ram for the destruction of ships	C. Perley	1,880
Nuts, Finishing	F. P. Pfleghar and W. Shollhorn	2,008
O.		
Offal, Treating	J. P. Baugh, E. P. and D. Baugh	2,114
Oils, Hydrocarbon, Distilling	W. Archer	1,989
Oils and gases, Condensing and separating	W. G. W. Jaeger	1,902
Oils and fats, Rendering	C. E. Gray	2,049
Ores, Furnaces for decomposing and desulphurizing	R. Spencer	2,021
Ores, Decomposing and desulphurizing	R. Spencer	2,022
Ore-crushers and stamp mills, Collecting the dust from	J. Brodie	2,090
P.		
Paddle, Feathering	Manley Paddle-wheel Company	1,944
Palates and gums, Artificial	J. A. Cummings	1,848
Palates and gums, Artificial	J. A. Cummings	1,904
Paper pulp	J. B. Brown	2,100
Paper and paper boards	J. F. Jones	1,898
Pipes, Cement	H. Holden	1,953
Pipes, Drain	B. S. and M. R. Pierce	1,897
Pipes, Tobacco	The Tobacco-Pipe Company	1,929
Pipes, Tobacco	A. Fessenden	2,085
Pistons for steam engines	H. D. Dunbar	2,029
Planters, Corn	G. I. Bergen	1,935
Planters, Corn	J. H. and D. R. Alexander	2,135
Press, Baling	F. F. Connell, jr	2,101
Press, Baling	C. H. Robinson	2,105
Press, Hay and cotton	I. James	1,954
Press, Punching	N. C. Stiles	2,139
Press, Screw	T. B. Webster and T. Gannon	2,111
Provisions, Curing	D. E. Somes	2,096
Pumps	W. A. Bemis	1,856
Punching and forming articles of irregular form	L. Dodge	2,084
Q.		
Quarrying and tunnelling, Machine for	A. Maxwell	2,129
Quartz stampers, Shoes and dies for	P. W. Gates	2,115

Invention or Discovery	Name of Patentee.	No.
R.		
Railroad ties, Wood, Preserving	B. S. Foreman	1,951
Rails, Railroad	W. D. O'Brien	1,891
Rakes, Hay, Horse	R. Pratt	1,893
Rakes, Hay, Horse	R. Pratt	1,894
Rakes, Hay, Horse	R. Pratt	1,895
Rakes, Horse	C. Mason, R. W. Fenwick, and D. W. C. Lawrence.	1,912
Rakes, Horse	C. Mason, R. W. Fenwick, and D. W. C. Lawrence.	1,913
Rakes, Horse	C. Mason, R. W. Fenwick, and D. W. C. Lawrence.	1,914
Rakes, Horse	C. Mason, R. W. Fenwick, and D. W. C. Lawrence.	1,915
Rakes, Horse	G. Peirce	1,921
Rakes, Horse	A. B. Sprout	1,978
Rakes, Horse	A. B. Sprout	2,032
Ram, Naval, for the destruction of ships	C. Perley	1,880
Ranges and stoves, Cooking	J. M. Read	2,076
Reaping machines	C. W. and W. W. Marsh	2,014
Reaping machines	C. W. and W. W. Marsh	2,115
Retorts, Gas and other	J. Chilcott	2,000
Rolls, India-rubber, Fastening to metallic shafts	G. J. Colby	1,992
Rooms, cases, &c., for preserving and transporting articles of food and other substances, Construction of.	D. E. Somes	1,909
Rowlock	I. C. and F. W. Flagg	2,091
S.		
Safes	L. Lillie	2,112
Sawing machine	A. E. and J. V. Warner	2,045
Sawing machine	F. W. Robinson	2,117
Scouring and hulling machine	O. P. Stevens	1,923
Screw, Heads of, for picture frames	J. B. Sargeant	2,077
Sewing machine	R. G. Fairbanks	1,930
Sewing machine	E. Townsend	1,962
Sewing machine	J. Bachelder	2,125
Shafts, Metallic, Fastening India-rubber rolls to	G. J. Colby	1,992
Shears	J. Bryant	1,999
Shingle machine	W. P. Valentine	2,107
Ships' knee	R. Thomas	1,966
Shirts, bosom-holder	J. Stevens	2,097
Sifter, Flour	H. Tilden	2,106
Silver and gold, Amalgamating and collecting	H. W. Adams and S. S. Worthington	2,028
Skirts, Hoop	S. A. Moody	1,872
Skirts, Skeleton	S. H. Doughty	2,046
Slate surface blacking, Composition for	I. N. Pierce	2,095
Soda fountain	S. R. Sylvester	2,033
Splints, Cutting	J. C. Brown	2,071
Stamps, Cancelling	J. W. Foster	1,871
Stone-cutting machines	G. J. Wardwell	2,087
Stone-cutting machines	G. J. Wardwell	2,088
Stove, Base burning	D. G. Littlefield	1,890
Stove, Base burning	D. G. Littlefield	1,970
Stove, Coal	P. P. Stewart	2,023
Stoves, Improvement in, by the introduction of superheated steam upon the fuel.	The Hagan Manufacturing Co	1,887
Stove and range, Cooking	J. M. Read	2,076
Street washer	J. Regester	1,984
Street washer	J. Regester	2,004
Sugar, dextrine, &c., Manufacture of	T. A. Hoffman	1,995
Syringes, Enema	H. D. Lockwood	1,940
Syringes, Enema	F. B. Richardson	2,005
T.		
Table, Folding	J. W. Wayne and J. R. Miller	1,855
Tackle block	I. E. Palmer	1,932
Tackle block, Attachment for	G. Focht	1,853
Tackle hook	J. W. Norcross	2,042
Tallow and lard, Rendering	C. E. Gray	2,048
Tanning hides and skins	S. H. Kennedy and H. L. Elder	1,849
Tanning hides and skins	S. H. Kennedy and H. L. Elder	1,955
Tea and coffee pots	E. B. Manning	2,013
Tea and coffee pots	E. B. Manning	2,075
Teakettles	E. Ripley	2,122
Telegraphs, Lightning arrester for	G. A. Stearns	2,043
Ties, Railroad, Wood, Preserving	B. S. Foreman	1,951
Time detecter, Watchman's	J. E. Buck	2,054
Tobacco, Cutting	F. W. Ritterhoff, C. A. Colquitt, and W. Mulchahey.	1,903
Tobacco, Plug, Machine for sheeting	W. J. Vanhorn and W. Alexander	2,044
Trade mark for lead pencils	J. Reckendorfer	1,933

Invention or Discovery.	Name of Patentee.	No.
Truck for street railway cars	R. H. Lockey	2,027
Tunnelling and quarrying, Machine for	A. Maxwell	2,129
V.		
Valves for steam engines, Arrangement of	J. F. Hamilton	1,864
Valves for steam engines, Operating	N. M. Condict and D. S. Steele	1,957
Valves for steam engines, Supplemental	R. Colburn and L. H. Hanson	1,862
Valve gear	J. F. Hamilton	1,863
Varnish, Copal	L. Hull	2,109
Vises for carpenters' use	O. V. Florey	2,126
W.		
Washers, Street	J. Regester	1,984
Washers, Street	J. Regester	2,004
Washing machine	J. S. Lash	2,051
Wearing apparel, Embossing and printing articles of, and incising button holes.	S. S. Stone	2,024
Wheels, Car	T. Sharp	1,851
Wheels, Propeller	R. E. Campbell	2,061
Wheels, Water, Gates for	A. L. Stout, W. M. Mills, and J. Temple	2,062
Willows, Peeling	G. J. C. Colby	1,991
Wire, Pointing	O. L. Hopson and H. P. Brooks	2,124
Wire, Skirt, Sizing and finishing	J. Washburn and P. L. Moen	2,025
Wire, Tempering	H. Waterman	1,874
Wood, Splitting	W. L. Williams	2,132
Wood railroad ties, Preserving	B. S. Foreman	1,951
Wringing machine	S. A. Bailey, S. S. and B. M. Cook	1,934
Wringing machine	J. S. Lash	2,052

DESIGNS—1865.

A.		
Alto-relievo, Composition in	H. P. W. Purdy	2,052
B.		
Badges, Army	I. T. Hooton and J. H. Cummings	2,217
Badge or breastpin	M. F. Ryan	2,029
Badge of the Union League	S. G. Vredenburgh	2,213
Belt-hook, Military	E. Blakeslee	2,028
Boiler-lid	J. L. Hadden	2,072
Bottle, Glass	I. N. Pierce	2,206
Breastpin or badge	M. F. Ryan	2,029
Burial case	F. H. Stickney	2,031
Burial case	M. H. Crane and S. A. Traugh	2,228
Bust of A. Lincoln	F. Mills	2,082
Bust of A. Lincoln	W. H. H. Philip	2,096
Bust of A. Lincoln	H. Berger	2,134
Bust of A. Lincoln	G. J. Haller	2,159
Bust of A. Lincoln	T. D. Jones	2,161
Bust of A. Lincoln	H. Manger	2,173
Bust of A. Lincoln, Bas-relief	E. V. Bunting	2,149
Bust of General Grant	L. Rebisso	2,194
C.		
Carpet pattern	E. J. Ney	2,019
Carpet pattern	E. J. Ney	2,020
Carpet pattern	E. J. Ney	2,021
Carpet pattern	E. J. Ney	2,022
Carpet pattern	E. J. Ney	2,023
Carpet pattern	E. J. Ney	2,025
Carpet pattern	E. J. Ney	2,026
Carpet pattern	E. J. Ney	2,046
Carpet pattern	E. J. Ney	2,047
Carpet pattern	E. J. Ney	2,048
Carpet pattern	E. J. Ney	2,049
Carpet pattern	E. J. Ney	2,050
Carpet pattern	E. J. Ney	2,051
Carpet pattern	E. J. Ney	2,073
Carpet pattern	E. J. Ney	2,074
Carpet pattern	E. J. Ney	2,075
Carpet pattern	E. J. Ney	2,076
Carpet pattern	E. J. Ney	2,077
Carpet pattern	H. G. Thompson	2,109
Carpet pattern	H. G. Thompson	2,010
Carpet pattern	H. G. Thompson	2,111
Carpet pattern	H. G. Thompson	2,112
Carpet pattern	H. G. Thompson	2,113

Invention or Discovery.	Name of Patentee.	No.
Carpet pattern	H. G. Thompson	2,114
Carpet pattern	H. G. Thompson	2,115
Carpet pattern	H. G. Thompson	2,116
Carpet pattern	H. G. Thompson	2,117
Carpet pattern	H. G. Thompson	2,118
Carpet pattern	H. G. Thompson	2,119
Carpet pattern	H. G. Thompson	2,120
Carpet pattern	H. G. Thompson	2,121
Carpet pattern	H. G. Thompson	2,122
Carpet pattern	H. G. Thompson	2,123
Carpet pattern	H. G. Thompson	2,124
Carpet pattern	H. G. Thompson	2,125
Carpet pattern	H. G. Thompson	2,126
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Carpet pattern	F. J. Pierce	2,168
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Carpet pattern	E. J. Pierce	2,192
Carpet pattern	E. J. Ney	2,204
Carriage, Advertising	O. F. Sage	2,232
Cases, Show	G. Q. Pragnell	2,041
Chimney, Lamp	J. Letchworth	2,092
Clock, Frame of a	L. Hubbell	2,189
Clock case	S. B. Jerome	2,057
Clock case	C. T. Foote	2,164
Clock front	G. S. Lovell	2,044
Clock front	G. S. Lovell	2,045
Clock front	N. Muller	2,060
Clock front	G. S. Lovell	2,090
Coffin	W. W. Roberts	2,069
Coffin	G. W. and W. P. Woolley	2,070
Coffin	G. W. and W. P. Woolley	2,071
Coffin handle	C. Strong	2,064
Coffin handle	C. L. Neiberg	2,068
Coffin handle	S. D. Arnold	2,079
Coffin handle	J. S. Ray	2,104
Coffin handle	A. B. Bailey	2,210
Coffin studs	D. A. Clark	2,103
Coffin and other trimmings	D. A. Clark	2,102
Collar, Paper	A. Peck	2,205
Collars, cuffs, &c., Paper	W. Boggs	2,135
Collars and cuffs, Ornamenting	B. W. Burnett	2,209
Comb	E. Brown	2,085
Comb	E. Brown	2,086
Composition in alto-relievo	H. P. W. Purdy	2,052
Cuffs and collars, Ornamenting	B. W. Burnett	2,209
Cuffs, collars, &c., Paper	W. Boggs	2,135
D.		
Desk, School	L. Fairbanks	2,201
Drawer pull	P. Cinquini	2,216
E.		
Elbow of sheet metal pipe	F. Bohsert	2,223
Emblem of the national Union	H. Harris	2,202
Envelopes	J. H. Reay	2,137
F.		
Fan	G. Anton	2,234
Figures, Group of	J. Rogers	2,062
Fork and spoon-handle	J. L. D. Sulivan	2,033
Fork and spoon-handle	J. Polhamus	2,061
Fork and spoon-handle	J. Polhamus	2,212
Furnace, Agricultural	M. Peckham	2,032
G.		
Group of figures	J. Rogers	2,062
H.		
Hat	D. K. Albright and L. H. De Lange	2,177

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Hat	D. K. Albright and L. H. De Lange	2,178
Hinges, Ends of, for blinds, &c	S. M. Richardson	2,221
Hook, Belt, Military	E. Blakeslee	2,028
Hook, Hasp	S. M. Richardson	2,237
I.		
Inkstand	J. Moore	2,211
L.		
Lamp	C. B. Wood	2,200
Locks, Cases and noses of	S. M. Richardson	2,222
Locks, Door	B. Mallory	2,038
M.		
Match safe	L. Macneir	2,224
Match safe	L. Macneir	2,225
Medallion head of A. Lincoln	J. Powell	2,097
Medallion of A. Lincoln	A. Leconte	2,108
Medallion of A. Lincoln	F. Simmons	2,139
Medallion of Chief Justice Chase	F. Simmons	2,147
Medallion of General Grant	F. Simmons	2,140
Medallion of Major-General Hancock	F. Simmons	2,142
Medallion of Major-General Hooker	F. Simmons	2,145
Medallion of Major-General Parke	F. Simmons	2,144
Medallion of Major-General Wright	F. Simmons	2,143
Medallion of William H. Seward	F. Simmons	2,146
Medallion of Vice-Admiral Farragut	F. Simmons	2,141
Memorial, Soldiers	J. A. Andrews	2,107
Monument	J. W. McLaughlin	2,095
Monument to the memory of A. Lincoln	W. H. Machen	2,218
Music stand	M. H. Elmore	2,088
N.		
National Union, Emblem of	H. Harris	2,202
O.		
Oil-cloth	O. E. Powers	2,167
Oil-cloth, Floor	J. T. Webster	2,065
Oil-cloth, Floor	A. C. Powers	2,193
Oil-cloth, Floor	J. Paterson	2,236
Oil-cloth pattern, Floor	J. Paterson	2,214
Organ case, Reed	J. L. Treat	2,197
Ox-Yoke	W. T. Remington	2,169
P.		
Photographic card	A. E. Alden	2,083
Picture, Emblematic	J. F. Bodtker	2,208
Picture frame	H. Vanderbeck and E. W. Hadden	2,148
Pipe, Sheet metal, Elbow of a	F. Bohsert	2,223
Pistol-handle, Revolving	J. A. Hickcox	2,027
Press, Copying	R. Hoe, jr	2,184
Press, Lemon	I. Townsend	2,078
Press, Letter, Arch of a	F. Hovey	2,231
Press, Seal or embossing, Stock of a	B. B. Hill	2,203
Pump, Stock of a cistern or well	L. Egleston	2,183
R.		
Range, Cook	I. A. Sheppard	2,099
S.		
Scales, Bullion, Standard of	L. J. Howe and J. V. Bouvier	2,040
Sewing machine	C. Cadwell	2,042
Sewing machine	C. A. Shaw and J. R. Clark	2,138
Sewing machine, Frame of a	J. W. Bartlett	2,180
Shawl case	G. Q. Pragnell	2,041
Shirt border	R. M. Bailey	2,087
Shoe	A. A. Gould	2,056
Shoe	H. Hunt	2,067
Sign	E. Berg	2,163
Soldiers' memorial	J. A. Andrews	2,107
Spoon-handle	R. Wendt	2,162
Spoon-handle	R. Wendt	2,172
Spoon and fork handle	J. L. Sullivan	2,033
Spoon and fork handle	J. Polhamus	2,061
Spoon or fork handle	J. Polhamus	2,212
Statuary, Group of	J. Rogers	2,024

Invention or Discovery.	Name of Patentee.	No.
Statuary, Group of	J. Rogers	2,195
Statues, Group, Masonic	W. Christisenssen	2,235
Statuette	E. J. Kuntze	2,018
Statuette	G. Starkey	2,233
Statuette of A. Lincoln	J. A. Bailey	2,084
Statuette of Shakspeare	E. J. Kuntze	2,991
Stock of a cistern or well pump	L. Egleston	2,183
Stool, Piano	H. F. Merrill and J. H. Brannon	2,059
Stove	B. F. Johnson	2,058
Stove	D. Hathaway	2,101
Stove	G. Chilton	2,150
Stove	J. Steffe	2,170
Stove	J. Steffe	2,207
Stove, Cooks'	J. G. Clark	2,080
Stove, Cooks'	I. A. Sheppard and J. Holger	2,098
Stove, Cooks'	N. S. Vedder	2,156
Stove, Cooks'	R. Wheeler and S. A. Bailey	2,158
Stove, Cooks'	H. S. and A. S. Hubbell	2,185
Stove, Cooks'	H. S. and A. S. Hubbell	2,186
Stove, Cooks'	N. S. Vedder	2,198
Stove, Cooks', Plates of a	L. Rathbone	2,034
Stove, Cooks', Plates of a	L. Rathbone	2,035
Stove, Cooks', Plates of a	W. W. Stevens	2,036
Stove, Cooks', Plates of a	G. Smith and H. Brown	2,153
Stove, Cooks', Plates of a	I. A. Sheppard	2,196
Stove, Cooking	C. Harris and W. W. Zoiner	2,229
Stove, Cooking	C. Harris and P. W. Zoiner	2,230
Stove, Flanges of a	P. Smith	2,100
Stove, Hall	J. Van Wormer	2,171
Stove, Panel of a	G. Smith and H. Brown	2,106
Stove, Parlor	H. S. and A. S. Hubbell	2,187
Stove, Parlor	H. S. and A. S. Hubbell	2,188
Stove, Parlor	C. Williams	2,219
Stove, Plates of a	J. Horton and J. Martino	2,090
Stove, Plates of a	J. Martino	2,093
Stove, Plates of a	G. Smith and H. Brown	2,105
Stove, Portable	J. Martino and J. Currie	2,094
Stove, Top of a	N. S. Vedder	2,157
Stove base	N. S. Vedder	2,154
Stove base	N. S. Vedder	2,155
Stove ornament	I. D. Zouche	2,037
Sun-dial	N. Carrol	2,182
T.		
Trade mark	S. S. Winchester	2,030
Trade mark	L. Seitz	2,039
Trade mark	S. Gwynn	2,043
Trade mark	J. C. Richard	2,053
Trade mark	F. E. Covell	2,066
Trade mark	A. F. Goodnow	2,089
Trade mark	D. L. Gold and J. B. Adams	2,151
Trade mark	J. Hosmer	2,160
Trade mark	J. Ames	2,179
Trade mark	J. P. Baxter	2,181
Trade mark	A. C. Mueller	2,191
Trade mark	A. H. Wirz	2,199
Trade mark	M. Leippe	2,220
Trade mark	G. L. Swett	2,227
Trade mark	W. P. and B. F. Weyman	2,238
Trade mark to be used on lead pencils	J. Schedler	2,063
Trap, Animal	H. C. Hart	2,081
Trimmings, Coffin and other	D. A. Clark	2,102
Type, Letter-press	A. Little	2,054
V.		
Valve handle	J. L. Matthews, jr	2,166
Vessels, Water, Base of sheet metal	J. H. Stone	2,226
W.		
Watch, Top plate and balance cock of a	F. A. Giles	2,055
Wind vane	A. L. Jewell	2,165

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B.		
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Invention or Discovery.	Name of Patentee.	No.
C.		
Carpets, Two and three ply, Manufacture of	A. Smith	7,825
Cars, Railroad	L. Myers	8,177
Cars, Railroad, Preventing the entrance of dust, &c., into	E. Hamilton	8,121
Coffins	A. D. Fisk	5,920
Curtain fixtures, Window	S. L. Putnam	8,041
Cutters, Harvester, Arrangement for controlling	J. H. Manny	8,385
D.		
Desk, School, (design 113)	W. P. Uhlinger, (whole number)	1,478
Door for vaults, safes, &c., Compound metallic	L. Cady	8,062
Drilling machine, Stone	J. W. Fowle	7,972
E.		
Engines, Steam	F. P. Dimpfel	8,210
F.		
Files, Cutting	J. Crum	8,199
Fire-arms, Revolving, Trigger operating	S. W. Marston	7,887
Forms, Irregular, Turning	P. S. Beers	7,937
Frames, Revolving, for drying fruit and other articles	J. C. Dickey	8,139
Fruit and other articles, Revolving frames for drying	J. C. Dickey	8,139
G.		
Governors, Engine, Steam	J. Judson	7,960
H.		
Harvester	A. A. Palmer, M. T. and S. G. Williams, (reissue.)	1,109
Harvester	A. A. Palmer, M. T. and S. G. Williams.	8,192
Harvester cutters, Arrangement for controlling	J. H. Manny	8,385
Harvester frames, Arrangement of joints for attaching trucks to	J. H. Manny	8,385
I.		
India-rubber, Manufacture of	H. B. Goodyear	8,075
India-rubber, Manufacture of	H. B. Goodyear	8,076
Insulators for lighning rods	G. W. Otis	8,316
Ivory, Bleaching	U. Pratt	8,639
K.		
Kilns, Lime	R. E. Schroeder	8,079
L.		
Lanterns	H. and J. Sangster	8,154
Lathes, Securing watches and pinions of in	J. M. Bottum	8,216
Leather splitting machine	H. Harris	8,369
Lightning rods, Insulators for	G. W. Otis	8,316
M.		
Mowing machines and Harvesters	J. H. Manny	8,385
N.		
Newspapers, &c., Printing names of subscribers upon	H. Moeser	8,175
Numbering the pages of account books	J. McAdams	8,291
Nut and washer machine	R. Crichton and J. Rees	8,322
Nuts, washers, &c., Making	W. Kenyon	8,427
P.		
Pinions of, and watches in lathes, Securing	J. M. Bottum	8,216
Presses, Hydraulic, Portable	R. Dudgeon	8,203
Presses, Printing	G. P. Gordon	8,285
Printing names of subscribers upon newspapers, &c	H. Moeser	8,175
Pumps, Rotary	J. S. Gwynne	7,901
R.		
Reaping machines	W. H. Seymour	8,212
Regulators for pen beam in ruling machines	W. E. Hickox	8,168
Ruling machines, Regulators for the pen beam in	W. E. Hickox	8,168

Invention or Discovery.	Name of Patentee.	No.
S.		
Safes, Fire-proof	L. Lillie	8,223
Safes, vaults, &c., Door for, Compound metallic	L. Cady	8,062
Screw blanks, Arranging and feeding	T. J. Sloan	7,958
Sewing machine	W. O. Grover and W. E. Parker	7,931
Sewing machines	W. H. Atkins and J. D. Felthousen	8,282
Sewing machines	J. M. Singer	8,294
Spinning machines, Drawing regulator for	N. Wyllys	7,919
Stitches, Forming, by machinery	A. B. Wilson	8,296
T.		
Turning irregular forms	P. S. Beers	7,937
V.		
Vats for tanning hides	L. C. England	7,854
Vaults, safes, &c., Doors for, Compound metallic	L. Cady	8,062
Ventillating	H. Ruttan	8,109
W.		
Washer and nut machine	R. Crichton and J. Rees	8,322
Washers, nuts, &c., Making	W. Kenyon	8,427
Watches, and pinions of, in lathes, Securing	J. M. Bottum	8,216
Window curtain fixtures	S. S. Putnam	8,041

REPORT

OF THE

COMMISSIONER OF PATENTS

FOR

THE YEAR 1865.

LETTER

FROM THE

COMMISSIONER OF PATENTS,

TRANSMITTING

HIS ANNUAL REPORT FOR THE YEAR 1865.

UNITED STATES PATENT OFFICE,
January 31, 1866.

SIR: I have the honor to transmit herewith the annual report of this office for the year 1865, to be laid before Congress.

I am, very respectfully, your obedient servant,

T. C. THEAKER,
Commissioner.

Hon. SCHUYLER COLFAX,
Speaker of the House of Representatives.

UNITED STATES PATENT OFFICE,
January 31, 1866.

SIR: In accordance with the provisions of the fourteenth section of the act approved March 3, 1837, I have the honor to submit the following report of the operations of this office during the year 1865.

The receipts and expenditures of this office for the year, and the condition of the patent fund at its close, will be seen by a glance at the following statements:

No. 1.

Number of applications for patents during the year	10,664
Number of patents issued, including reissues and designs	6,616
Number of caveats filed	1,937
Number of applications for extensions of patents	78
Number of patents extended	61
Number of patents expired, December 31, 1865	914

Of the patents granted, there were to—

Citizens of the United States	6,428
Subjects of Great Britain	82
Subjects of French empire	40
Subjects of other foreign governments	66

No. 2.

Statement of money received during the year, namely:

On applications for patents, reissues, &c	$321,572 20
For copies and recording	27,219 64
Total	348,791 84

No. 3.

Statement of expenditures from the patent fund.

For salaries	$100,032 54
For contingent expenses	75,244 43
For temporary clerks	97,453 37
For withdrawals	420 00
For refunding money paid by mistake	649 00
For judges in appeal cases	400 00
Total expended	274,199 34

No. 4.

Statement of the patent fund.

Amount to the credit of the patent fund, January 1, 1865	$55,592 28
Amount of receipts during the year	348,791 84
Total	404,384 12
From which deduct the amount of expenditures	274,199 34
Leaving to the credit of the patent fund, January 1, 1866, the sum of	130,184 78
Surplus of receipts over expenditures	74,592 50

The unprecedented activity of the mechanical industry of the country since the close of the war of the rebellion is strikingly manifested by a comparison of the business of this office for the last year with that of the previous years since the organization of the office.

Table exhibiting the business of the office for twenty-nine years ending December 31, 1865.

Years.	Applications filed.	Caveats filed.	Patents issued.	Cash received.	Cash expended.
1837	.....	.....	435	$29,289 08	$33,506 98
1838	.....	.....	520	42,123 54	37,402 10
1839	.....	.....	425	37,260 00	34,543 51
1840	765	228	473	38,056 51	39,020 67
1841	847	312	495	40,413 01	52,666 87
1842	761	391	517	36,505 68	31,241 48
1843	819	315	531	35,315 81	30,766 96
1844	1,045	380	502	42,509 26	36,244 73
1845	1,246	452	502	51,076 14	39,395 65
1846	1,272	448	619	50,264 16	46,158 71
1847	1,531	553	572	63,111 19	41,878 35
1848	1,628	607	660	67,576 69	58,905 84
1849	1,955	595	1,070	80,752 78	77,716 44
1850	2,193	602	995	86,927 05	80,100 95
1851	2,258	760	869	95,738 61	86,916 93
1852	2,639	996	1,020	112,056 34	95,916 91
1853	2,673	901	958	121,527 45	132,869 83
1854	3,324	868	1,902	163,789 84	167,146 32
1855	4,435	906	2,024	216,459 35	179,540 33
1856	4,960	1,024	2,502	192,588 02	199,931 02
1857	4,771	1,010	2,910	196,132 01	211,582 09
1858	5,364	943	3,710	203,716 16	193,193 74
1859	6,225	1,097	4,538	245,942 15	210,278 41
1860	7,653	1,084	4,819	256,352 59	252,820 80
1861	4,643	700	3,340	137,354 44	221,491 91
1862	5,038	824	3,521	215,754 99	182,810 39
1863	6,014	787	4,170	195,593 29	189,414 14
1864	6,972	1,063	5,020	240,919 98	229,868 00
1865	10,664	1,937	6,616	348,791 84	274,199 34

It is here seen that the number of applications for patents received in 1865, exceeded by nearly forty per cent. the number filed in any previous year, and the number of caveats filed exceeded those of any previous year by more than seventy-five per cent. The number of patents issued exceeded those issued in 1864, the highest previous year, by more than thirty per cent.

The receipts into the patent fund exceed those of any former year by more than thirty-six per cent., while the expenditures were only increased a trifle over eight per cent., and a considerable surplus is left to the credit of the patent fund.

If the cases brought to the attention of the office continue to be as numerous as at present, it will become necessary to make such additions to the examining and clerical force of the office as will absorb a portion of the surplus earnings; while, on the other hand, if the anticipated resumption of specie payments should be attended with any general financial prostration, the receipts of the office would undoubtedly fall below the rate of the present expenses.

When the Patent Office was first established as a separate bureau, in 1836, the act provided for the appointment of a single examining clerk. The number has been increased by additional legislation at successive periods, until, by the act of March 2, 1861, the limit was fixed at sixteen examiners and the same number each of first and second assistant examiners.

As will be seen by a reference to the comparative table given above, there was a material reduction in the business of the office immediately after the passage of the act just referred to, and it was found unnecessary, until recently, to appoint the full number of examiners allowed by law. But so rapid has been the increase of inventive activity, that it is now found impossible to prevent the examinations falling largely in arrears.

The number of applications in the hands of the examiners at the close of the year, on which no action had been taken, was 1,134.

I would therefore recommend that authority be given for the appointment of four additional officers of each of the several grades, if their services shall be found necessary to the examination of the applications presented.

By the act of May 27, 1848, the salary of the examiners was fixed at twenty-five hundred dollars per annum; and by the act of March 3, 1855, that of the first assistant and second assistant examiners was fixed at eighteen hundred dollars and sixteen hundred dollars per annum, respectively. The position of first assistant examiner is one of great importance and responsibility, as he is frequently called upon to decide upon the merits of applications in the absence of his principal, and it is also of almost daily occurrence that the pressure of work will be such as to force the examiner to rely mainly upon the judgment of his assistant. I am satisfied that the interests of the office and of inventors generally would be promoted if the salary of the first assistant examiners were raised to two thousand dollars.

I would also most respectfully urge that the salary of the librarian be raised to twenty-five hundred dollars per annum, the sum now paid the examiners. The library now contains upwards of 15,000 volumes, exclusive of some 1,500 volumes temporarily in the rooms of the Agricultural Department. Although the number of volumes is not so large as may be found in many other public libraries, the works are almost exclusively of a scientific and technological character, and it is doubtful if there is another library in the country which is so nearly complete in all the departments of practical knowledge. During the past year rather more than 1,000 new volumes have been placed upon the shelves, while the expenditures, exclusive of the sums paid for the binding and transportation of the specifications and drawings of English patents so liberally presented to the office by the Great Seal Patent Office of England, have been less than $500.

The library is constantly visited by inventors from all parts of the country, as well as by persons engaged in the various branches of scientific investigation, and it is requisite that the librarian shall be a man of broad culture and familiar with the contents of all the works under his care. As these cover the whole domain of practical science, it is manifest that the salary of the librarian should be at least equal to that of a principal examiner.

In addition to the examining corps, the administrative and financial business of the office requires a considerable force of clerks, who are distributed into several divisions, such as experience has shown to be most conducive to the rapid performance of the work.

I think there can be no doubt of the propriety of having each of these divisions under the charge of a clerk of the highest regular grade; and I would therefore recommend that authority be given for the appointment of six clerks of the fourth class.

The disbursing clerk is now ranked as a clerk of the fourth class. All moneys received or expended by the office pass through his hands, and he is held responsible for the accuracy of his accounts.

I can see no reason why his salary should be less than that generally paid to the disbursing clerks in the several executive departments, and I would recommend that his salary be fixed at two thousand dollars per annum.

The act of March 2, 1861, provided for the appointment of a board of examiners-in-chief, whose duty it should be to revise and determine upon the validity of decisions made by examiners when adverse to the grant of letters patent. An experience of five years has fully confirmed the wisdom of the enactment, but it has at the same time demonstrated the necessity of additional legislation upon the subject. While a fee of twenty dollars is charged upon an appeal from the examiners-in-chief to the Commissioner, no charge is made for an appeal

from the examiners to the board. It results from this that appeals are taken in many cases without a shadow of ground, and, in contested cases, merely for the purpose of delay. During the year 1865 there were 495 appeals taken to the board, of which number 166 remained undisposed of at the close of the year. If a fee of ten dollars were charged on appeals to the board it would check the number of frivolous appeals, and would be gladly paid by those inventors who are confident of the justice of their claim, as they would recognize it as securing them an early decision in place of the delay of months to which they are now so generally subjected.

After consultation with many inventors, and with solicitors in extensive practice, I am satisfied that the proposed amendment would be received with almost universal favor.

The published reports of this office, with the descriptions and illustrations of patented inventions, are not only of great value to inventors and the country, as indicative of the directions in which mechanical and scientific skill is pushing its way into new channels, but their general diffusion effects a very important reduction in the labor to be performed in this office. By a study of the report, one who has perfected an improvement in some useful machine is in many instances enabled to see at once whether his invention is novel, and if so, the particular feature which has never been the subject of a patent. Again, when an existing patent is referred to by the office as a reason for the rejection of an application, the applicant is saved the time and expense required to obtain a copy of such patent by its publication in the annual report. This is especially true of the latest reports, inasmuch as, when a necessity is felt by the public for an improvement in some particular art or manufacture, the ingenuity of inventors in different parts of the country is stimulated into activity in that particular field, while at another period the excess of activity is turned into other paths.

For these reasons the labor of the office is much increased by the delay which has recently attended the publication of the annual reports; and the value of the reports to the public is much diminished by the late day at which they make their appearance. The heavy pressure upon the Public Printing Office, occasioned by the increased business of all the executive departments growing out of the war which has now been so happily terminated, has been one cause of the delay; and if this were all, it would not be expected that this office should complain. But the most serious obstruction to an early issue is found in the state of the law, or rather, I might say, in the absence of any law upon the subject. Although it has long been the settled practice of the government to publish the list of patents with the illustrations, there is no law authorizing such publication except as the printing of each report is ordered after the same is submitted to Congress. Some time must then elapse before a contract can be made with the engravers, and it is usually April or May before the engraving can be commenced upon the patents of the previous year. It is worthy of consideration whether authority might not be given in advance for the preparation of the plates, so that the drawings could be placed in the hands of the engraver as soon as the patents are issued, and the whole work be prepared for the printer immediately after the close of the year. The number of copies to be printed might be determined by order of either house of Congress, after the report is submitted, in the same manner as now. If this course be adopted, the public will be placed in possession of the information nearly, if not quite, a year earlier than they can under the present system, and the charge upon the treasury will be in no measure increased.

Concurrent with the establishment of this office was the adoption of the policy of disposing of the models illustrative of inventions in such manner as should be conducive to a beneficial and favorable display thereof, the rooms in which they were arranged to be kept open during suitable hours for public inspection. The act also contemplated the exhibition of specimens of unpatented manufac-

tures and works of art. The thirty years which have succeeded have seen the germ thus planted expand into magnificent proportions, until the saloons on the upper floor of the Patent Office are now among the chief public attractions of the seat of government, and thronged daily by visitors from all parts of the country as well as from beyond the ocean.

Here may be seen at a single glance, as it were, the progressive steps in the invention and perfection of the wonderful labor-saving machines of the past quarter of a century, from the first blind gropings of mechanical genius up to the splendid and successful productions of the present day. The models are not only of great assistance in the examination of applications, but it is my conviction, which I am happy to know is shared by many of those most conversant with the subject, that from ideas gathered in a visit to these halls have sprung many inventions of great value to the community. It is in view of this last suggestion that the wisdom of the framers of the act stands out in the boldest relief, since the benefits which are to flow in the future from this source are almost incalculable. If this policy is to be continued, which I hardly allow myself to doubt, the attention of Congress must be turned, at an early day, to the consideration of the manner in which enlarged accommodations for this office can be provided. Of three hundred and ten cases for the reception of models, but twelve are now unoccupied, while one is barely sufficient for a single week's issue of patents. By removing the rejected models, which now fill eighty-six cases, and by crowding the whole to their utmost capacity, it will probably be possible to exhibit the patented models of the next three or four years, although with much inconvenience. At the same time, it should be stated the models accompanying rejected applications are often of a high value for purposes of illustration and suggestion.

The rooms in which the business of the Patent Office is now transacted are even more inadequate for the purpose than are the galleries above. Under the administration of my immediate predecessor it became necessary to use for other purposes some of the rooms before occupied by copying clerks, and the work of copying was given out to be done by copyists at their private residences. Although the practice involves the sending the files and records of the office through the streets and into various parts of the city, I have thus far found myself unable to make any change from the utter impossibility of providing desk room within the building for the fifty-six copyists now employed; and the work of this division is constantly increasing. The large increase in the number of patents requires a corresponding increase in the force employed in engrossing and recording, and the orders upon the office for copies of records and for recording assignments have more than doubled in the last four years.

In 1862 the receipts into the patent fund for copies and recording assignments were	$11,081 50
In 1863	16,976 29
In 1864	20,055 22
In 1865	27,219 64

A considerable loss of time inevitably results from the interruptions attendant upon placing two examiners, with their respective assistants, in the same room, as it is not infrequently the case that inventors, or their counsel, desire to appear in person and deliver oral arguments before the examiner. In many interference cases there are three or more contesting applicants, and while a cause of this character is being tried on one side of a small room, it is manifest that no business can be transacted upon the other side which requires any close attention or consecutive thought. Notwithstanding this objection, six of the examiners are obliged to accommodate themselves to such arrangement, as there are but thirteen rooms which can be assigned to this branch of the business of the office.

It is worthy of note that the classes in which the work has fallen most behind

are in this situation. If additional examiners shall be appointed, as I have recommended above, the evil will be but intensified, unless rooms can be assigned to them which are now occupied by other bureaus. The library is also crowded into a space too narrow to allow the proper arrangement of the shelves, and it is impossible to devote any convenient space for the use of those not connected with the office who desire to consult the books. In fine, while the occupation of some rooms in addition to those now at my disposal is a matter of immediate and pressing necessity, it is evident that many years cannot pass by before the whole of the present building will be needed, unless some radical change shall be made in the organization and business of the office.

The most feasible plan for attaining the relief which is now so urgent is undoubtedly that of providing rooms in some other building for the use of the Agricultural Department. Of the value of the services which that department has rendered to the country since its organization I cannot speak in too high terms, and with the immense territory which is just opening, for the first time, for the application of *intelligent farming*, the labors of the department will be proportionately increased as the bounteous stream of knowledge which it diffuses spreads over a wider and wider field. If a change of location could, in any way, impair its usefulness, its removal would be a serious matter; but I am informed that, in the opinion of the head of that department, such would not be the result. Already a portion of the clerks are placed in other rooms, and only by an entire abandonment of the Patent Office can the whole department be brought together. If it came properly within the scope of this report, I might consider the propriety of erecting a suitable building for the use of the Agricultural Department; but leaving that subject to the Commissioner of Agriculture, with whom it appropriately belongs, I must reiterate that the absolute necessities of this office demand additional rooms, which can be obtained immediately in no other way than by the removal of that department.

The law in relation to the issue of patents, as well as the practice of the office, in its general features, has been so nearly uniform for a long term of years that any violent innovation is objectionable; but there are some few matters of detail in which, in my judgment, the interests of both inventors and the public would be promoted by a change.

The twelfth section of the act of March 2, 1861, provides that all applications for patents shall be completed for examination within two years from the filing the petition, and in default thereof shall be regarded as abandoned.

Under the construction given to this statute by my predecessor, it has been the practice of the office to regard applications as abandoned when they have lain two years after a rejection without any action on the part of the inventor to procure a reconsideration. The correctness of this interpretation of the law has recently been questioned, and it must be admitted that a strict adherence to the letter would hardly sustain the rule. There is clearly no reason why an application should be regarded as abandoned in the one case which will not weigh with even stronger force in the other. If the practice spoken of be not adhered to, it becomes impossible to determine when a rejected application can be referred to on the examination of a subsequent one, or when the model and drawing may be submitted to public inspection, as neither is proper while the application is considered as pending. There can be no hardship in requiring one who makes claim to an invention, and who has had one or more examinations by the office, and then allows the case to rest for two years or more without action of any kind, to present a reasonable excuse for his delay if he desires to call the matter up anew. I would therefore recommend such an enactment as will leave no doubt of the legality of the course hitherto pursued.

This period of *two years* is recognized in several instances as the measure by which the rights of an inventor shall be determined; and I am convinced that if the same idea is extended to another case not now within its scope, the occa-

sion for much serious injustice will be removed. Under the existing law a patent is taken out in which the inventor makes a clearly defined claim to a particular feature. The claim, it may be, does not cover all that is described in the specification or shown in the drawing, and whatever is thus left unclaimed may be used by any person, unless protected by a previous patent. Some enterprising manufacturer, who is keen enough to recognize the value of that which the inventor did not deem it worth his while to appropriate, invests his capital and begins to furnish the public with a valuable article; and after this the inventor applies for a reissue of his patent and an extension of his claim so as to give him the monopoly of that which he had before left open to the use of the world. If it appears, upon examination, that the original specification described the art or device in question, and that the holder of the patent was actually the original inventor, he is entitled to a reissue in such terms as to preclude the use of such device, except upon such conditions as he may grant. It would not be difficult in this manner to entrap a person into such an arrangement of his business or employment of his means as to leave him at the mercy of the inventor, or to compel him to pay an exorbitant royalty, when the patent is reissued with a broader claim. In my opinion it would be a judicious amendment of the law, and would prove an effective safeguard to the rights of innocent parties, if the privilege of reissuing a patent in such terms as to broaden the claim were restricted to the first two years of the life of a patent, leaving reissues for other purposes to be granted at any time, as at present.

The act of 1861 allowed applicants to pay a portion of the fee required for the issue of a patent at the time of making application, and the remainder at the convenience of the inventor, whenever he might desire the patent to be engrossed. As it was found that many patents were allowed to lie indefinitely, it was further provided, in 1863, that if the final fee were not paid within six months after the patent was passed and allowed, the invention should become public property as against the applicant. In 1865, it was further enacted that any person who fails to pay the final fee within the time limited may make a new application for the same invention at any time within two years from the date of the allowance of the original application. Under this state of the law, cases have been brought to the attention of the Office, in which inventors have been unable to pay the fee within six months, or to file a new application within two years from the date of the allowance of their application, by reason of absence from home in the service of the United States. To confiscate the property of an inventor because he has imperilled his life for the sake of his country is so glaringly unjust that it needs but to be mentioned to secure the adoption of a remedy. I would suggest that, whenever it be made to appear to the satisfaction of this Office that a failure to pay this final fee, or to renew an application within the time limited by law, has been due to the absence of the inventor from home on duty in the army or navy of the United States, the forfeiture shall be set aside and the patent issued.

The sixth section of the act of March 3, 1839, provided that, in all cases where an invention had been patented in a foreign country prior to the issue of a patent here, such patent should be limited to the term of fourteen years from the date or publication of such foreign letters patent.

On the second of March, 1861, it was enacted that all patents thereafter granted should remain in force for the term of seventeen years from the date of issue. This was construed by my predecessor as merely extending the term, but as in no wise affecting the limitation above quoted from the act of 1839. The Office, therefore, continued to antedate all such patents in the same manner as before the passage of the act of 1861; and, as my attention was not called to the point on my assuming the direction of the Office, the same practice has been followed until quite a recent period. My attention having been called, within a short time, to the subject, it has been held, after consultation with the Secretary of

the Interior, that the rule of the Office, for the past five years, was clearly without any authority of law, the act of 1861 plainly operating the repeal of so much of the act of 1839 as shortens the term of the patent. Although the language of the statute is so explicit as to necessitate this construction, I have reason to believe that such was not the intention of the framers of the act, but that they merely intended to extend the term from fourteen to seventeen years, as an equivalent for the withdrawal of the privilege of extension. The belief that such was the intention of the act was so general among inventors and patent lawyers that the former ruling of the Office was almost universally accepted for nearly five years. Under this state of facts it is manifestly proper that those patents which were issued for a shortened term under the former practice of the Office should be continued in force for the full term of seventeen years from the date of their issue, if the law in relation to the subject is to stand as at present. As, however, some legislation is necessary, I would invite attention to the following considerations:

While an application for a patent is pending, the specification, model, and drawing are held strictly confidential, no knowledge of them being allowed to go beyond the office without the express consent of the inventor or his duly authorized attorney. Any other course would be full of peril to the honest inventor, as unscrupulous men could readily adopt whatever was valuable in the invention, and there would be no redress. Secrecy is the only protection available before the issue of the patent. But, in cases of an invention which has been patented abroad, the full description is already open to the public, so that nothing is gained by treating the application as confidential, while there are reasons of great force for applying exactly the contrary rule to these cases. If any manufacturer or artisan meets with the published description of an invention which, upon inquiry, he learns has not been patented in this country, it is surely legitimate for him to adopt it; and this fact is recognized by the existing statute in denying a patent for an invention patented abroad if the same has been introduced into use in this country. But this provision has been hitherto almost a nullity in practice, since it is rarely possible for the Office to obtain trustworthy information as to the question of fact. No one but the applicant, or others in his interest, is cognizant of the pendency of the application, nor would the knowledge be likely to reach the persons most interested if the veil of secrecy were withdrawn. When an application is made for the extension of the term of a patent, the law requires that notice of the fact shall be given to the public by advertisement in a newspaper in the city of Washington, and in another published in that part of the country most interested adversely to the grant of the petition. I can see no reason why the same rule should not be followed in the case of inventions already patented abroad, and I would, therefore, recommend an enactment to that effect. As the cost of advertising is about twenty-five dollars for each case, it would be necessary to increase the fee payable on such applications by that amount; but the inventor would be fully compensated for this by the full term for which his patent would run. The much greater probability of the fact of the invention having been introduced into use being made known to the office would deter inventors from the risk of the delay which now so frequently intervenes between the issue of the foreign patent and the applications here. In fact, I am strongly inclined to the opinion that such a change in the law would result in the much earlier introduction of foreign inventions to the American public than has heretofore prevailed.

When applications are made for the extension of patents, as the law now stands, the Commissioner alone decides the case, and from his decision there is no appeal. In my opinion this lodges with him too much power. In the class of cases referred to there is often a very heavy interest at stake, frequently amounting to hundreds of thousands of dollars, and the adverse parties are the patentee, or his heirs, on the one side, and the public on the other. The act of

1836 vested this power in a board consisting of the Secretary of State, the Commissioner of Patents, and the Solicitor of the Treasury; but with the increase of business, and the consequent frequency of applications of this character, it became difficult, if not impracticable, to assemble the board, so that, in 1848, a change was made, and the law was fixed as now. Since the establishment of the Board of Examiners-in-Chief the evil which led to the passage of the act of 1848 no longer exists, and it appears to me eminently proper that extension cases should be referred to this board for decision. And the public interest would be rendered more certainly secure if the concurrence of the Commissioner with the action of the board be required before a patent can be extended The plan suggested possesses the advantage that the matters involved would be considered by four minds instead of one, and there would be much less danger of an extension being procured by corrupt means than where one alone decides the case, and that, too, without appeal. I suppose it to be prudent to so legislate as to guard as far as possible against fraud and corruption by making it dangerous to attempt and difficult to accomplish, rather than to seem to invite it by making it either easy or safe; and as courts for deciding important causes are seldom so constituted as to consist of but one member, why should the custom be departed from in this instance where heavy interests are depending?

With over eleven hundred applications untouched by the examiners at the commencement of the present month, and new cases coming in more rapidly than the old ones can be disposed of, I have felt unwilling to require those employed on the several classes of invention to devote the time necessary for the preparation of any elaborate review of the progress in the arts, which is evidenced by the records of the Office for the past year.

The following brief sketches will be found, however, to be well worthy the attention of all who are interested in the development of the industry and resources of our country and of mankind.

Class A.—Agriculture.

Division 1.—*Implements for working the soil, &c.* *Division* 3.—*Implements for preparing produce for market.*

There is perhaps no agricultural implement of greater importance than the plough, and in some form this has been used by men through a greater number of centuries than any other implement. Its history is an interesting one, and its efficiency may be taken as an index to the state of civilization in all countries where it is used. Consisting at first of the rude branch of a tree, it has from time to time been improved until it is difficult to conceive in what way it can be made more efficient. In no country has there been greater improvement in this implement of husbandry than in the United States of America, and it is a significant fact that these improvements have been made chiefly by men in the northern States.

The efficiency and proper use of the plough lie at the very foundation of all our national prosperity. The demand for its use is first in peace, and indispensable in war. Its use furnishes bread to the million, and commerce to the world. At no time has its efficiency been more marked than during the past few years. Notwithstanding nearly a million of men were taken from industrial pursuits in the loyal States during the first two years of the war, the third year found a larger breadth of grain upon the ground than the year preceding the rebellion. This ability to supply the deficiency of manual labor is due chiefly to improved instruments for cultivating the soil. From the earliest history of our country two things have stimulated improvements in machinery of various kinds: First, necessity; and second, the protection offered to inventors by our patent law. Since the establishment of the Patent Office there have issued not less than five

hundred and sixty-five patents for improvements in ploughs alone, and the number of patents on cultivators (which implement in fact is but a modification of the plough) will not fall much short of this number. The single plough has been the longest in use, and has undergone the greatest number of modifications. Various materials have been used in its construction. Fifty years ago it was mostly made of wood and iron, the share being tipped with steel; cast-iron has since been most extensively used. In some parts of the country, especially the prairies of the west, the soil is found to possess a particular property of "packing" upon the mouldboard, which adds greatly to the force required to turn the furrow. Cast-steel has been used, with partial success, to obviate this difficulty, but it has been found that its liability to rust presents the same objection found in the use of cast-iron. Within the last year efforts have been made to use glass and other vitreous substances in the construction of mouldboards, and it is said that reasonable success has thus far attended the effort. In those experiments that have been made with glass mouldboards, it is found that the friction upon the soil is very much reduced, requiring from one-quarter to one-third less power to perform a given amount of work than a cast-iron mouldboard.

Considerable attention has also been paid within the last year to the construction of what are termed "gang ploughs." In very heavy ploughing they are not likely to go into use, but in second or fallow-ground ploughing they may become very efficient and labor-saving.

Much has also been done to improve cultivators. These, it will be seen, have been brought to a good degree of perfection, so much so that in the cultivation of corn (maize) and other similar crops but little use for the hand hoe remains. From ten to twelve acres forms an ordinary day's work for a man and horse.

In seeding machines the attention of inventors has been directed to a greater proficiency and exactness in their operation; and it is gratifying to know that these efforts have been crowned with success.

Since the return of Union soldiers from the cotton States there has been considerable attention paid by many of them to the improvements of machinery for planting the staple of that section of the country, and from the present indications the heavy and unwieldy "slave hoe" will soon pass into oblivion, as has the system which gave it use. The planting and cultivation of the cotton crop differs in some degree from that of maize, and hence requires a modification of the implements for that purpose.

Several important and, it is believed, valuable patents have issued within the past year, intended to aid directly in the cultivation of the cotton crop, which, no doubt, if introduced will save at least nine-tenths of the labor previously required, thus supplying by the use of machinery the loss of labor that has been feared in consequence of the abolition of slavery. In truth, the labor thus set free will become employed in other channels of industry, while a larger breadth of land will be cultivated in a better manner and with greater profit. During the past year a number of valuable patents have been granted for machines for threshing and preparing grain for market; and it would seem probable that invention in this direction has nearly reached the culminating point.

With the most recent improvements in grain separators, it is found to be practicable to separate the grain and deliver the straw in good condition for binding —quite a desideratum, when straight straw in bundles bears nearly the price of hay. The degree of perfection which has been attained in the cleaning and separation of various kinds of grain from each other is truly astonishing, and it would now seem almost impossible to make up a mixture of the various kinds of grain and tares that could not by one operation become completely separated, delivering each kind and parcel by itself.

The degree of perfection to which all inventions are now tending has not and

will not be gained by a single mighty stride in any particular branch, but is and will be the result of what may be termed small improvements, one inventor adding a little here, and another a little there, and thus little by little the invention grows as it were to the stature of manhood, and becomes useful in the great theatre of life. While the improvements hereinbefore enumerated are, perhaps, among the most important to the farmer, it is proper to state in this connection that the minor implements have not been neglected by inventors. A great variety of improvements is being introduced in various farming implements and tools, tending as a whole to the reduction and ease of manual labor, as well as a more perfect result and a richer reward.

Class A.—Agriculture.

Division 2.—Machines and implements for harvesting grains, grasses, &c.

Invention in reaping and mowing machines during the year has been confined principally to improvements in details of construction and arrangement, these details embracing almost every part or feature of the several machines in common use. Among those as having received especial attention may be mentioned the manner of connecting the hinged folding cutting apparatus with the main frame, the object being to make the connection strong, simple, and reliable, such as to allow the cutting apparatus to conform freely to inequalities in the surface of the ground, and also in some cases to rock or roll in the direction of the path of the machine; for varying the angle of presentation of the cutters to the ground, so as to adapt them to the nature of the work to be accomplished. Considerable attention has been given to the manner of combining and the means for operating in what is termed the "combined reel and rake," operating in connection with the hinged cutting apparatus, whereby the motions of the latter in conforming to the uneven surface of the ground were imparted to the rake and reel, keeping them always in the same relation to the cutting apparatus and platform, and enabling them to work equally well in any position. Various improvements have also been made in the manner of operating the "dropping platform and cut-off," devices designed to displace the various rake attachments, which require, ordinarily, much power to operate them, the cut-off serving to arrest the fall of the cut grain upon the platform, while the latter is tilted or has its rear edge dropped upon the ground, so as to slide the grain accumulated thereon off upon the ground in the path of the machine, in convenient shape and quantity for binding. One result of these numerous improvements has been to render the machines imple in construction, and in machines to be operated by a single horse, and even of hand machines for lawn mowing, and, consequently, several patents have been granted during the year upon machines of this latter class.

Horse rakes have received their share of attention, though invention in this branch of the division, also, has been confined to improvements of devices already in use. The tooth of the rake has been improved in form, &c., so as to adapt it to use upon the most uneven ground; also, the means for attaching the teeth to the head, and the device for operating the rake, both automatically and by the attendant, so as to secure at the same time simplicity and efficiency. The same in substance may be said of the various other machines used in securing the crop of hay and grain, such as hay spreaders, horse hay-forks, rakers, loaders, &c. Improvements therein have been confined to perfecting details, so as to make these machines simple and cheap, efficient in the performance of much of the severe labor of the harvest heretofore done by hand, and within the reach of the farmer of moderate means.

Class A.—Agriculture.

Division 4.—Mills for grinding.

In the class of mills for grinding and dressing grain, including the bolting and packing of flour, no very marked or distinctly radical invention has been made during the year, the applications relating to the details and improvements of old ideas and devices rather than to the leading principles embraced in this division of inventions.

In the other branch of this class, embracing the breaking and grinding of quartz, inventors show energy and inventive talent which leads off in four distinct directions—one in improving, perhaps the most ancient of methods for reducing the quartz by stamping; another by revolving heavy grinding wheels in a trough, the wheels passing over the quartz; while another reduces the quartz, first by crushing between reciprocating jaws and afterwards passing the broken pieces between rollers and grinding surfaces to complete the reduction; while still another places the broken quartz into a strong receptacle, having revolving arms with breakers or hammers upon them, which in their rapid revolution strike the quartz and break it by the force of the blow, or by projecting it against some other part of the machine arranged for the purpose. The operation is kept up until the quartz is reduced to powder.

Class B.—Calorifics and Photics.

Division 1.—Apparatus for warming, ventilation, cooking, &c.

The increase of inventions in this division is clearly indicated by the following figures: In 1863 the number of cases presented for examination was 305; in 1864 it was 389; and in 1865 it was 562; and the number of cases passed for issue was 292. This increase in the number of applications does not appear to have been disproportionately great in any particular class of cases, but if in any, those pertaining to the adaptation and use of hydro-carbons for fuel.

There have been twenty-nine cases of the former and twenty-two of the latter. A good number of ingenious devices promising much in economy, and attractive on account of size and portability, have been patented; but no remarkably novel feature was presented in any. Old ideas developed in former cases, in our own or in foreign patents, have been generally adhered to, and but little change is found in the invention than some specialty in the construction or arrangement of the different parts of the apparatus. But none have shown any high degree of inventive skill, though marketable, useful, and very attractive devices have been produced.

It seems well nigh certain that there is a broad field of invention to be opened by finding how hydro-carbons may be best used as fuel. They possess in themselves, so admirably condensed, the chief elements of combustion, that we must confidently expect at no distant day to find them in practical, economical, and common use in steamships, locomotives, workshops, for cooking, and other purposes requiring the application of heat. Already we see tokens that inquiring minds are beginning the busy search for means to bring about such a result.

Several furnaces for steam boilers, the inventions of our own citizens or foreigners, have been patented. The improvements here have been generally of an important character.

The construction of grate bars has received much attention; many new and apparently useful devices, where strength, durability, and lightness are well combined, have met with favorable consideration.

Inventors and manufacturers also have been very industrious in producing new combinations in cooking and heating stoves and in furnaces, but so much had been done in this domain in former years that little more remained to be

accomplished, than to produce some slight improvements in the adjustment of the several parts.

The large number of applications for patents for grain dryers seems to be a correct index of the demand for economy in time and labor which commerce now makes, in order to prepare the cereal crops of the west for their markets, and serves to show how great the endeavor is to substitute for the labor of men's hands the cheaper and more powerful agents of mechanical combinations.

The ventilation of mines, ships, houses, cars, churches, &c., has been earnestly discussed in many applications; well known and most competent men, possessing large information about the history and science of this subject, and capable of adding experience to education, have produced several meritorious inventions. The new styles in building houses, ships, &c., and the new devices for generating heat for warming apartments and other kindred causes are constantly calling for modifications of old schemes of ventilation, or for new expedients to preserve a reasonable supply of vital air in the rooms where we dwell or pursue our daily avocations. Efforts in this direction appear to be all the more worthy of notice, and more commendable, as the devices or apparatus are not generally of such a character as to win large present praise or pecuniary compensation for the toil and thought bestowed upon them.

Class B.—Calorifics and Photics.

Division 2.—Lamps, lanterns, gas-burners, &c.

The last four years have wrought a great revolution in the whole economy of artificial light. In all families beyond the reach of gas-light, candles have almost disappeared, and lamps, producing a light nearly as desirable as gas, have taken their placce. This has resulted mainly from the immense development within that time of petroleum, which has in a few years sprung up into a national interest, as the following facts will show:

There were exported in 1862, 10,887,701 gallons; in 1863, 28,250,721 gallons; in 1864, 31,755,687 gallons.

Of crude oil there were refined, in 1864, 22,553,288 gallons; in 1865, 30,472,127 gallons.

Estimating the quantity consumed at home as only equal to that exported, the whole amount produced is, in 1862, 21,775,402 gallons; in 1863, 56,501,442 gallons; in 1864, 63,511,364 gallons; in 1865, 86,673,462 gallons.

This great new source of artificial light having been obtained, it remained for the inventive genius of the country to construct lamps fitted for its consumption. The result has been that nine hundred and eighty-six applications have within that period been filed in this class, being more than four times the number in the same class during any previous period of the same length.

The objects aimed at have been mainly to produce a clear flame without smoke or unpleasant odor, by cutting off the heat from the oil reservoir, spreading the flame and concentrating upon it the oxygen of the atmosphere; to cheapen the manufacture of lamps so as to bring them within the reach of all; to accommodate them for lanterns for general use, and for locomotive head-lights, and for signal lights for conductors of railway trains. These objects have been so generally attained that they have gone into almost universal use.

Class C.—Carriages and Land Conveyances.

The applications in this class have been largely in excess of any former year, and the improvements have been numerous and varied, but most of them have been modifications or changes in well-known devices, and are, therefore, not of a character to demand special description or comment.

Class D, E and Q.—Chemistry and Metallurgy.

The whole number of cases filed in 1865 was 1,326, and 966 of these were passed for issue. The number filed in 1864 was 818.

The number of distinct arts and manufactures embraced in these classes is so large as to make it out of the question to notice any but the more prominent ones.

The high price of gas-producing coal, and the abundant supply of the light hydrocarbons from petroleum has induced a great many inventors to seek for means of using naphtha, benzine, &c., as a substitute for gas for illumination.

The mode of accomplishing this is to charge atmospheric air with the vapor of the hydrocarbons. In a general way the problem has been long solved; but in practice it is found that to accommodate the varying temperature of the air, the varying density of the naphtha, and the different rates at which the vapor is required for consumption, has presented difficulties which are, as yet, only partly overcome. But several of the devices presented this year show very marked improvement over former inventions.

The treatment of petroleum and its products, so as to purify and render them applicable to new uses, has received a good deal of attention. The heavy parts of petroleum are now largely used for lubricating machinery, and for that purpose seem almost indispensable. Patents have been issued for modes of treating petroleum so as to render it suitable for mixing paints, preserving wood, oiling wool, and making blacking and varnish. Paraffine, the solid nearest related to coal oil, is found useful in coating barrels for coal oil, cloth, leather, and many other articles where water-proof covering is wanted.

Besides patents for new articles of hard rubber, there have been nine patents issued during this year for improvements in the production of this material. Heretofore it has been difficult to give any desired color to hard rubber, except a jet black. By several of the inventions lately patented, any color may be given to this material. It is expected that these inventions will greatly increase the manufactures from hard rubber.

The manufacture of iron and steel has received special attention during this year. Numerous improvements on what is known as the Bessemer process have been patented, and the working of that process in this country is fully established. The strengthening of both cast and wrought iron, by the addition of purifying materials, such as chrome, manganese, cryolite, and various alloys and compositions, has been effected.

Several of these processes, while possessing no great amount of scientific novelty, are quite important in their practical results, in some instances raising the tensile strength of cast iron from thirty to fifty per cent. at a small cost.

A patent has been issued for an improvement on what is known as malleable cast iron, which renders that material of greatly increased value for the manufacture of cutlery, ploughs, and other articles.

Several patents have been issued for making iron and steel direct from the ore. Judging by the specimens shown, the improvements seem to possess considerable utility.

Rich ores, suitable for this course of treatment, abound in this country, and there have been numerous efforts made to establish a successful manufacture of bar iron direct from the ore. But generally, after a brief trial, these efforts have been abandoned.

Improvements on the well-known processes of puddling, smelting, and refining iron have been numerous. These generally relate to labor-saving machinery and processes.

The number of improvements in machinery and processes for obtaining the precious metals have been large. These relate especially to modes of freeing

the ores from sulphur, and to machinery for effecting the amalgamation of the metals in a better manner. It is well known that only a small part of the gold contained in the ore can be recovered by any of the ordinary processes. A patent has been granted for combining a small amount of the metals, sodium or potassium, with the mercury used in amalgamation. This has the effect to greatly increase the affinity between the mercury and gold.

Class F.

Divisions 1 and 2.—Civil and Railroad Engineering.

The following tabular statement shows the condition of the class of inventions under the above divisions in comparison with the number of applications and issues for the year 1864:

Months.	Applications received.	Applications issued.	Months.	Applications received.	Applications issued.
1864.			1865.		
January	33	24	January	57	38
February	35	20	February	59	26
March	39	22	March	88	33
April	35	29	April	75	35
May	33	25	May	51	47
June	47	24	June	63	76
July	59	24	July	56	41
August	39	25	August	85	45
September	66	41	September	58	41
October	42	17	October	68	59
November	45	39	November	79	47
December	63	71	December	60	20
Total	536	371		799	503
Increase in 1865	263	132			
	799	503		799	503

This class has kept pace with many others in the office in the development of inventions, although nothing of a peculiarly marked character has become the subject of official action. The improvements patented as well as the applications generally refer to railroads, mining implements, and apparatus used for boring wells. The number of applications covering inventions appertaining to railroads, numbers for the year 1865, 330; and those appertaining to boring or operating wells, for the discovery of oil, 256. The development of this rich product of the earth has stimulated invention to an extraordinary degree. The locality of the oil being so deep in the bowels of the earth, requires the use of devices that can penetrate with the greatest rapidity its hidden reservoirs. Numberless difficulties have been met, which the ingenuity of the inventors has already overcome, and many are now the subject of deep thought and anxiety. It is reasonable to suppose, from the progress already made in the development of means to gather this great element of wealth, that in a short time the progress of invention will determine the best and surest method for the attainment of the greatest results.

Class F.

Division 3.—Mechanical Engineering.

In this division much of interest has been accomplished, for here exists an extended field for the inventive mind, which seems to a great degree to have kept pace with the increasing wants of the people, and anticipated the demand for labor.

The ingenuity of inventors has attempted, by mechanical means, to so control and operate the various machines with which our country abounds, that they have to a very great extent supplied the places of the persons who were made victims of war. In brief, it may be said that during the past year more has been done in this direction than in any previous year of the existence of this office. Hay and cotton presses are embraced in this division, and during the continuance of the war the transportation of hay and straw for army purposes became so vastly increased, that it gave rise to a necessity for some improvements in machines for baling purposes, and the adage "Necessity is the mother of invention" has been abundantly proved in the numerous advancements which have been made to meet the exigency.

To such perfection has the method arrived, that bales of hay or straw can be made so compact as to occupy but little more than one-fourth the space that was required for bales of the same weight in former years. Since the war has ended and the shipment of hay, &c., has diminished, the applications for such devices have fallen off. But the South has been opened to free labor, and now cotton presses are increasing in about the same proportion; showing again that the inventive genius of our people is inexhaustible and adequate to meet any emergency. We may now expect many important improvements in this direction, inasmuch as "king cotton" is hereafter to submit to such compression as free men shall consider proper.

Class G.—Fibrous and Textile Manufactures.

This class embraces all the machinery and processes for separating fibre from plants, for operating upon the fibre, and for the production of fabrics, except those in which the aid of chemistry is required.

The whole number of applications in this class for the year 1865 was 378, as against 338 for 1864, and 276 for 1863; showing an increase of about 10 per cent. over 1864, and of about 31 per cent. over 1863.

Of this number (378) 250 patents were ordered to issue; of which there were for sewing machines 83, (including hemmers, guides, &c.;) looms and fabrics, 56; spinning machines 33; knitting machines, 20; paper and paper twine machines, 14; carding machines, 13; wool-oiling machines, 9; wool-washing machines, 3; the remainder being distributed among machines for dressing threads, &c., braiding, weaving a covering for cords, measuring cloth, lace and net machines, hat-felting, fulling and finishing felted goods, burring and carding cylinders, thread and yarn winding machines, surface-sizing of wadding, imitation embroidery, &c.

Sewing Machines.

Prominent among these are those designed for stitching button-holes; among which may be mentioned one which adapts the well-known Wheeler & Wilson machine for this purpose, by giving to the bed-plate a slight shifting motion to allow of sewing over the edge of the fabric, whilst a fixed button through which the needle passes, and a straight fixed guide near the needle, afford a space between them for the passage of a flat cloth-holder having parallel sides and semicircular ends, the cloth being affixed to pins on the upper surface of this holder, and having a motion with its forward half, turning and returning. The feed may be stopped at will when it is desired to strengthen or bar across the square end of the button-hole.

Another carries a short thread, as in hand sewing, first through the cloth and returning through the button-hole. The needle is blunt at one end; its point is uppermost, and it has two eyes in the middle. The range of motion of the needle-arm is gradually lessened as the thread is consumed; the cloth is fed by means of an irregular gear, somewhat of a button-hole shape.

Another machine employs, in addition to the ordinary Wheeler & Wilson bobbin for the lower thread, a similar bobbin to carry a cord or bar thread; each bobbin lies within the cavity of its own revolving hook, whose axes are both in the same line; one hook oscillates, the other revolves; the threads are wound upon the bobbins in opposite directions. One hook catches the needle loop and carries it over its bobbin and over the cord; the oscillating hook then seizes this loop, carries it in the opposite direction and drops it over its bobbin. The four-motion feed is used, but it has, in addition, a lateral and return motion.

In another machine a single thread is used for button-holing; an inclined looper beneath the table, with a crescent-shaped end, advances, rises, and carries a loop above the table and over the edge of the cloth and over a tongue on the cloth plate; it then makes a quarter turn, that the needle may descend in the notch of the looper and within the loop; on its retreat it becomes free from the loop, while the feed advances and pulls the loop off the tongue; this allows sufficient looseness of the stitch to allow it to be laid out flat in turning back the goods, edge to edge, as in the sewing of carpets.

In another, in which three threads are used, a reciprocating hook manipulates the loops in such a manner that the loop of the needle thread shall surround that of the thread carrier, and that the shuttle thread shall pass through this loop of the carrier.

Another machine, in which are used the usual perforating needle and, also, a lower thread carrier, which takes its thread up and over the edge of the cloth, is so modified as to be easily converted into a lock-stitch machine. To effect this the thread carrier is turned upon a pivot out of operative action, while a swinging shuttle carrier is placed in action, and the loop-spreader above the cloth is locked to the needle bar, so as not to rotate as when used in button-holing.

Mr. Humphrey has also some improvements upon his machine patented in 1862, designed, among other things, to give the required increase of feed while sewing around the eyelet or rounded part of the button hole.

Among the improvements designed for sewing with waxed thread upon leather, &c., are the following:

Means for heating the wax and for waxing the thread, and also for heating the metallic parts of this machine near which the waxed thread must pass; improvements in positive take-up levers for the thread; in the form of the shuttle and of the needle; in means for closing the uppers of shoes and gaiters, and for other work on leather, where it is desirable that the line of the seam shall be sunk below the surface of the material, thus dispensing with excessive tension on the threads and avoiding the weakening of the leather, as if the usual groove were cut; in means for avoiding the liability of the goods to become stretched and puckered, and thus preventing the hole punctured by the awl from getting out of its true position for the needle to enter; in dispensing with the usual large cams, thus diminishing friction and noise, and in the use of automatically lifting presser-feet; in means for waxing the needle thread, not, however, until after the thread has passed through the fabric, the shuttle thread receiving its wax from the needle thread, the liquid wax being steadily and automatically forced up from a reservoir into a shallow concave in the shuttle race, a closed door to the shuttle preventing any wax from entering, and a felt or cloth wiper, saturated with benzine, clearing the shuttle of any adhering wax.

Another machine, for sewing the soles upon boots and shoes while the same are turned inside out, has its platform, which sustains all the sewing mechanism, centred upon the driving shaft, and so that it may be raised or lowered, by a rack, to bring the operative mechanism into proper position relatively to the channel in the shoe where the line of stitching is to be made; the table supporting the work is also adjustable vertically. Another of this class automatically registers the number of shoes soled by it.

Several novelties appear in machines for making and stitching ruffles, one of which, whilst feeding the cloth in the ordinary manner, passes it, also, through an auxiliary device secured to the table; a wheel in this device is rotated by the passage of the cloth, and it gives a greater velocity than its own to another wheel, which thus gathers the lower piece of cloth; adjustable hinged spring plates press the cloth upon these wheels, and when the operator does not wish to ruffle, this pressure is relieved by means of thumb-screws.

A box-plaiting apparatus is also connected with a sewing machine, so that in the finished goods, plaited upon the sewing-machine table, there shall be in each single plait two stitches, and in each double fold or box plait four stitches.

From among the other peculiar features observable in sewing machines may be further enumerated the following:

Locating the shuttle-race *above the table*, and supporting it on the needle-arm bracket; giving to the shuttle a *grooved tongue* for its whole length, which supports it in a dovetailed groove in which it travels; employing a *blast of air* to open and properly deflect the loop of the needle-thread, for the shuttle to enter; giving to a feeding wheel a forward and backward movement, in addition to the usual rotary movement; the wheel is locked during its forward movement, thus acting as an ordinary feeding dog, but in its backward movement, instead of falling like a feeding dog, it rotates on its axis, and the surface of the wheel rolls on the under surface of the cloth without moving it; changing the line of direction of a four-motion feed to any line within the range of ninety degrees, by the mere turning of a circular plate in the table through which the feed-dog works; compensating for the wear on its bearings of the revolving looping hook by means of a split bushing, compressible by an adjusting screw; driving the machine faster or slower, or stopping it altogether, while the driving power continues the same; making on a Wheeler & Wilson machine either a simple chain stitch or a chain stitch interlaced with a locking thread; adapting a Wheeler & Wilson machine to the making of the Grover & Baker stitch, as well as the lock stitch; also to the making of a three-threaded stitch, being the lock stitch and Grover & Baker stitch combined; providing means whereby the varying thickness of goods passing under the presser foot shall cause the needle to rise to corresponding elevations, while it shall not fail to descend uniformly to the same point, that its loop may be properly taken by the shuttle or looper; so arranging the crank motions for operating the needle and shuttle, as that the reciprocations of the mechanism shall counterbalance each other, all the primary actuating devices for all the motions (except the needle-arm) being brought into a compact group, and attached to a single piece of casting.

Looms.

In this class the *card-shaft* of a *Jacquard* has been given an endwise motion in addition to its usual intermittent rotary motion, to admit of weaving different patterns by the same cards.

In *lappet-weaving*, the pattern-wheels in a late improvement have been placed on the side of the looms, instead of on the lay, to admit of working a larger pattern; the needles working vertically as well as laterally.

In another machine the pins in the pattern-wheel are adjustable, to vary the pattern.

In looms for *weaving pile fabrics*, by means of movable rods, both above and below the warp, narrow goods are woven, having a pile both on the upper and lower surface of the material.

In *weaving* fabrics with button-holes, a portion of the dents of the reed have been made with an inclined projection of the length of the button-hole; the reed has a positive upward motion while weaving one side of the button-hole, and a corresponding downward motion when weaving the other side, to allow the in-

cline to gradually adapt itself to the gradually increasing web as woven, the take-up motion of the cloth being stopped during the downward motion.

In *weaving with hair or grass*, or other short materials, another improvement avoids the exposure of the ends of the weft at the edges of the fabric, and weaves it with a selvage edge, and of any desired width; to effect this the hair or grass is previously formed into a continuous piece by a machine, in which it is fed in upon an endless apron in such manner that each filament or hair shall lie parallel with the others, the smaller ends overlapping the larger ends, and these surrounding a central guiding thread or core, to which they are then united by a binding thread wound spirally around the whole.

In the mode of *driving the shuttles* by condensed *air*, another inventor uses flexible tubes, connected with a reservoir, and places pistons and cylinders at each end of the shuttle-race.

Rising and falling *shuttle-boxes* are operated in another invention through the variable motions imparted by a set of sliding hooks, each pivoted at a different distance from the centre of the same rocking bar.

To adapt *reeds* to beams of different lengths, another inventor makes their ribs elastic, that they may be lengthened and the dents spread out or brought closer together, as may be desired.

Heddle-frames are also made practicably adjustable to any desired length, by being so constructed as to allow more or less heddles to be put on or off with great facility.

An automatic *registering attachment* records the number of yards of fabric woven, and protects against the felonious abstracting of cloth from the loom.

Means are also introduced to change the weaving at will, and without delay, from plain to twill, and *vice versa*.

Hand-looms.

A marked and increasing activity is visible in improvements in hand-looms, and of these the applications come almost exclusively from the western States. Their aim is mainly to cheapen, simplify, and render more efficient this class of looms.

In one, the upright rods carrying the harness are interchangeable on the treadles, so as to vary the twill or style of the cloth at pleasure. Others operate the shuttles, harness, and the cloth-beam from the motion of the batten. Tappet-shafts and pattern cylinders are frequently introduced. The difficulties arising from using at times reeds of different thickness are sought to be overcome. An adjustable compound bevelled pinion allows the take-up to be timed as desired, to any point in the vibration of the batten. A pivoted bar on a central picker staff, and to which the picking cords are attached, prevents their being worn away, by keeping them in a right line with the face of the batten. A horizontal adjustability of the bearings of the warp-beam admits of regulating the tension, so as to have both sides of the web uniform.

Spinning.

Latterly more applications for improvements in spinning *mules* and *jacks* have been received than heretofore.

The object, in mules, has been to cause the tension of the yarn, when building up the cop to operate certain novel devices for equalizing the strain, by operating the counter-faller, and thus gripping an endless belt connected with the carriage, until then, inoperative, and, through the medium of other devices, communicating the corresponding change of velocity to the drum and spindles; to drive the whole of the spindles, on either side of the mule-head, from one common horizontal cylinder instead of from several vertical drums; to dispense with the clutch on the horizontal shaft which runs the whole length of

the carriage; and to regulate the tension for winding-on, dispensing with the use of a weighted lever.

The improvements in *jacks* have been for putting friction upon the driving pulley, by partially sliding the belt upon it from the loose pulley, and so assisting the spinner in winding-on; to insure a simultaneous starting of the delivering, stretching, and twisting operations; to permit the delivering operation to cease at any point during the outward movement of the carriage, and while the stretching and twisting is continued; and to secure a correct registry of the number of yards spun, by devices not liable to be tampered with by dishonest operatives as to register falsely.

An improvement in *spinning rolls*, which have an endwise motion, consists in such a construction as admits of removing their bearing ends when worn, and substituting new ones.

A machine for *making paper cop tubes* takes a strip of paper as broad as the length of the cop tube desired, runs it through the machine, applies paste to its surface, cuts it into proper lengths, and presents it intermittently to a rotating mandrel, around which it is formed into its tubular shape by means of a revolving brush; the completed tube is then discharged by the longitudinal withdrawal of the mandrel, and the operation is repeated.

Knitting machines.

In this important department of the arts inventors are very active. Some very ingenious but complex machines were patented within the year; among them an improvement by Mr. Kilbourn, upon his patent of April 9, 1861. It is a straight frame and knits sheets of fabric, so shaped, and with selvaged edges, as to be ready to be sewed up into the form of stockings. The knitting commences at the top and ends with the toe, some of the needles being automatically withdrawn for narrowing. The knitting of the central portion is suspended, whilst forming two side pieces for the heels; after which the central knitting is resumed to form the upper part of the foot and toe. The sole piece is next formed by taking from the needles the two heel strips, and placing them together and again knitting toward the toe. The edges not united in the machine are sewed together by hand, viz: the seam up the back, and the sides of the foot piece.

Tubular goods (such as stockings complete, without seam, and mittens, except the thumb) are also knitted upon a machine having two rows of horizontal latch needles, lying point to point in the same place; a single thread is delivered to each row alternately. The extreme *closed* tip of the stocking is first knitted by the machine, and the continuation of the knitting widens it out and makes it tubular. A Jacquard determines the pattern.

Another inventor employs an *endless chain* of *removable needles*, linked together by hooks and eyes, the chain being capable of being shortened or lengthened, and combined with a provision for reversing the motion of this chain, and thus making *tubular goods* of different sizes, and also knitting straight pieces of widths, and widening or narrowing the same, the whole being a compact machine, designed for household purposes.

Another employs *needles latched at both ends* and sliding across an open space through which the fabric drops, and makes plain or ribbed goods, the latter having the ribs running either transverse or lengthwise of the fabric; the breadth of the ribs being variable at will. He uses either a straight or circular frame.

In another *endless chain* machine, each needle slides in its own independent frame, and the *frames are linked* together by hooks and eyes, so that the chain may be lengthened or shortened. No stitch hooks are used; but the loop is clamped between two flat surfaces to allow a new loop to be drawn through it

Other new features may be briefly summed up as follows: long latched needle

combined with short latched ones, to allow the interlacing of the loops of one row with those of two or more rows, instead of with the adjacent row only. The knitting of shoe lacings from a number of strands of yarn, coming directly from the spun cops, and without being twisted together, these strands being supplied to a barbed needle, and knitted as one into a single chain by the usual knitting or crochet stitch. Sundry improvements are also made in needles, whereby slides are used instead of latches to close and open the hooks.

Carding, &c.

The improvements under this head are not particularly marked, and relate to means for feeding the fibre and preparing it for being fed; the construction of the cylinders to avoid their liability to spring under the influence of centrifugal force; arranging the feeding-in cylinder so as to facilitate its being easily removed, to be cleaned, ground or repaired; retaining the short waste fibre escaping from the main cylinder; a more uniform stripping of the doffer and reduction of wear; giving the doffer comb an adjustable drawing action on the fibre; means for cleaning cylinders, by a card-clothed brush cylinder having wire teeth about double the length of those of the cylinder to be cleaned; and to hanging the flats of an endless chain of self-stripping top cards upon their axes in such manner that they can accommodate themselves to the necessary angle to the surface of the main cylinder, required while traversing over the cylinder.

In a cotton combing machine two nipping cylinders rotate intermittently, and by their opening and closing jaws transfer the fibre from one to the other, so as to comb both ends. The feed-rollers and comb vibrate to and from the first nipping cylinder, and deliver to it a tuft from the lap or fleece; this tuft is then acted upon by a combing cylinder having graduated rows of teeth; it next passes to the second nipping cylinder and to a similar combing-drum, and then to a doffer.

Wool-oiling.

In connection with the carding machine, and to be attached to it, several improvements have been made for oiling the wool, embracing among them the following features: Raising the oil from its reservoir by the capillary attraction of a wick whose upper end hangs over a rod or pipe, (which may be heated if desired,) the ridges of a revolving fluted roller press gently this wick and wipe out the oil and convey it to the surface of a plain roller, which by gentle pressure imparts it to the wool upon the feed apron, dripping the oil upon the wool from the pendent edge of a piece of cloth which receives its supply from a drum revolving in a reservoir—a can with an air-tight top and a discharge-pipe at its bottom to supply a tank; while another pipe for air, from the top of the can above the oil line, also extends down into the tank as far as it is intended the oil shall rise; the closing of the oil pipe by the ascending oil in the tank prevents further discharge; in the tank a roller revolves in contact with another above it which serves to spread the wool; a strip of wire gauze attached to a shaft, and which is intermittently immersed in an oil bath and then suddenly sprung back so as to shower the oil upon the wool on an endless apron; a longitudinally grooved roller revolving step by step within an oil tank, so that the oil within each groove shall be permitted to drop through a corresponding opening in the bottom of the tank, an endless wire gauze apron beneath receiving and conveying the oil to the wool on the feed cloth; an independent scraper to keep the pressing roller clear of the oiled wool adhering to its surface, the same being interposed between the pressing roller and the top feed roller of the carder; an oil tank with an enclosed revolving dipper to take up and convey the oil to a revolving brush, which latter conveys it to the feed rollers; revolving blades within a reservoir dashing the oil up to a trough which conveys it to a perforated

revolving disk having a roof above and a slotted pan beneath it, dripping the oil from a reservoir into the mouth of a vertical tube having a ball and socket connection with the side of a cylindrical case which nearly surrounds a revolving brush; this brush, striking a deflector at the mouth of the case, sprinkles the oil upon the wool; by turning the case on its axis, the spray will be scattered over a greater or lesser surface of the wool.

Paper-making.

The inventions in this class are designed to retain the water between the grinding surfaces, and thus keep the pulp from clogging; to improve the durability and efficiency of the bed-knives in grinding engines; to provide for the adjustability of such knives to the desired elevation as they are worn away; to prevent the water from running back upon the pulp; to substitute for the felt or canvas a woven fabric of several plies, loosely interwoven and formed into an endless belt of uniform thickness by lapping the ends, as in Baker's patent, October 22, 1861; and to finish sheets of paper between two flexible sheets of highly polished copper, each of which passes over a roller, the rollers being tightly compressed together and the ends of the copper sheets being sustained by cords and weights so as to move forward and backward.

Sundry improvements have also been made in the manufacture of paper twine.

Winding spools of commerce.

A most ingenious foreign invention, patented here, automatically takes up the common marketable spools upon which sewing cotton is to be wound; places them in position for winding; winds them full; stops when the required quantity is wound; cuts an incision in the head of each spool; fixes securely the thread therein; severs the thread; discharges the spool; takes up fresh empty ones, and starts to wind again.

Lace or netting machines.

In this machine one-half of the threads are disposed in the manner of warp threads, the other half being carried each by its separate shuttle; these shuttles by means of a vibrating frame are taken from a stationary frame beneath the horizontal threads, and are simultaneously carried above them; a lateral motion is then given to all other threads, so that each shall cross two of the shuttle threads, after which the shuttles descend. Vibrating levers are alternately brought into action, to beat up the threads evenly at the points of crossing. No weft is used.

Imitation embroidery.

As a strong and cheap but equally beautiful substitute for hand-embroidered canvas, such as is used for slipper patterns, &c., a fabric is so woven or stamped that its surface shall present, throughout, minute square elevations; this surface is then printed with any pattern or colors desired, and closely resembles the embroidered goods.

CLASS K.—FINE ARTS AND GAMES, (INCLUDING PATENTS FOR DESIGNS.)

It is a curious fact that the war should have disturbed the inventive genius of our people in so small a degree in the ornamental arts. But the happy termination of the rebellion has allowed men to return to their former pursuits with increased vigor, as shown by the applications for patents in this class:

In the year 1860 we received 742 applications; in the year 1861 we received 458 applications; in the year 1862 we received 421 applications; in the year 1863 we received 472 applications; in the year 1864 we received 529 applications; in the year 1865 we received 787 applications.

The nature of the inventions is shown by a few of the following sub-classes. Seventy-seven applications received this year are for improvements connected with the art of printing, forty for improvements in musical instruments, seventy-eight are for improvements in photography. The rest are for book-binding, jewelry, engraving, pens and pencils, safety paper, postage and revenue stamps, bank notes, &c.

After examination five hundred and three patents were granted, and three hundred and ninety-four applications were rejected as unpatentable.

Two hundred and seventeen of the patents granted are for designs, the rest for mechanical devices. Many of these inventions possess an interest surpassing the limit of a few remarks in a report like this; it is sufficient to say that at no former period have there been so many applications for patents in the useful and ornamental arts; and I believe the value of the inventions to the public has not heretofore been surpassed.

Class I.—Fire-arms and Implements of War, Sporting, and Fishing.

The successful termination of the war, early in the year, has produced a notable reduction of the number of applications for inventions and improvements in warlike implements; the number is, however, still nearly double that of the year preceding the war, and will most probably remain permanently higher, although destined, no doubt, to fall considerably below its present amount. In view of the time usually required to fully introduce even valuable improvements, inventors will naturally appreciate the advantage of the maxim that bids us prepare for war in time of peace—well knowing that whatever approves itself on careful trial, will ultimately be adopted by the nation, on the principle of an enlightened self-interest.

The whole number of applications filed during the year in matters pertaining to ordnance, small-arms, their ammunition, and the miscellaneous incidents of the military art, is shown in the following table, in comparison with a similar statement for the preceding year, and also for the year before the war.

	1860.	1864.	1865.
Cannon	12	52	17
Projectiles	17	74	45
Small-arms	78	155	126
Cartridges	17	38	38
Miscellaneous	15	39	27
	139	358	253

A comparison of the number of applications in this class filed during the first six months of the year, with the number filed during the last six months, shows the following proportions:

1865:	first 6 mos.	Last 6 mos.	Whole year.
Cannon	10	7	17
Projectiles	33	12	45
Small-arms	73	53	126
Cartridges	20	18	38
Miscellaneous	16	11	27
	152	101	253

Under the designation "cannon," are included various methods of mounting and directing guns, as also improvements in gun-carriages. With "projectiles" are embraced various packing bands and sabots for adapting them to rifled

ordnance, and also improvements in shells and their fuzes. Among "small-arms" are included, besides improvements in revolving cylinders and breech-loading devices, various improvements in magazines, locks, &c. Of "cartridges," a large portion relates to methods of priming them, or rendering them inflammable on percussion. And in "miscellaneous" are included various incidents of sights, bayonet attachments, ram-rod worms and scrapers for cleaning gun-barrels, caps, cap machines, cartridge-boxes, torpedoes, tents, &c.

In the following table are shown the number of improvements in fire-arms, &c., actually patented during the last two years:

	1864.	1865.
Breech-loading cannon	13	3
Other improvements in cannons and carriages	23	13
Projectiles	55	31
Breech-loading small-arms	59	58
Revolving fire-arms	17	21
Other small-arms	8	5
Cartridges	18	12
Miscellaneous	47	36
	240	179

It is interesting to observe that while the class generally has considerably fallen off, improvements in breech-loaders have continued as abundant as ever, and improvements in revolvers, which are most largely used in personal defence, or as the armament of the citizen, have actually increased. While nothing among the above-mentioned patents can properly be selected as worthy of special notice for its pre-eminent merit, it may be safely affirmed that no historic war has been so prolific in the rivalry of invention, and in the reality and variety of improvements in the implements of warfare, as that which has just been waged by our government for the maintenance of its territorial authority and national sovereignty.

Class J.—Household Furniture.

In this division the number of applications received during the year was 724, and 427 patents were issued; besides which, there were many cases passed for issue, which were at the close of the year awaiting the payment of the additional fee.

The class embraces almost everything used in furnishing a dwelling-house, except the heating and cooking departments; and it is one of the peculiarities of the inventions that they are such that every family can use them to great advantage.

Judging from the number of washing machines and wringers patented, our people should have the reputation of being the most cleanly people upon the earth. In the manufacture of some of these, especially wringers, large factories have been established, and a great amount of money invested.

During the last six months there has been quite a competition between inventors of brooms, of flour sifters, and of bread and meat cutters.

The most numerous inventions and patents are washing machines and wringers, 92; bread and meat cutters, 35; brooms and brushes, 34; bedsteads, beds and bed bottoms, 31; flour sifters, 23; clothes dryers, 20; tables, 15; chairs, 13; mops, 10.

Class K.—Hydraulic and Pneumatics.

This class comprehends the mechanical devices adapted for the reception, transmission, and application of the forces, of liquids and fluids.

Among the improvements patented during the last year are the following:

An overshot water-wheel having a partition in each bucket nearly concentric with the periphery of the wheel, and extending more than half-way to the next bucket, in order to retain a portion of the water until the bucket has reached its lowest position, a hole in the base of each bucket permitting the flow of the water outside of the described division, and within said division of the bucket next in advance.

In horizontal scroll wheels, divisions transverse to the buckets are formed to retard the outflow of the water. The retention of water in the casing beneath the wheel is provided for, to relieve the pressure of the wheel upon its steps. Buckets inclining toward the periphery receive their water from a scroll having its bottom formed of a spiral plane longitudinally, and inclined transversely. In wheels receiving water at the periphery, annular gates are elevated and depressed by a horizontal shaft and pinions which move vertical ratchets. In a horizontal wheel, receiving water through several chutes or ports, on the upper side, a partial revolution of a disk or gate closes all these chutes simultaneously.

In water elevators for wells, and in lubricating cups for journals, many minute modifications have been made.

The pressure of water flowing through a cock is regulated by a counter-current of determinable volume presenting its resistance to a flexible diaphragm by means of which a valve in the cock is held to duty. In a globe valve cock the stuffing box is below the screw arrangement, which is detachable to permit grinding the valve.

A flange on the periphery of the vertical valve moves in a corresponding groove surrounding the valve seat. A beer faucet, in screwing into the barrel, displaces a plug, which returns to its position by a spring when the faucet is withdrawn, so that waste is wholly prevented. A vertical valve stem is hung in a surrounding yielding diaphragm, which prevents the rising of the liquid. A flexible ball, constituting a valve, is held by a vertical swivelled follower. An elastic body, fashioned like a long acorn, is held by its cup or flange under the screw-cap, and is opened by a cam movement on top, which contracts the body in the direction of its length by means of a lifting rod secured in the centre of the valve. A soft metal valve is attached to its follower by a joint which admits of adaptation of position to the valve seat. The nozzles of beer faucets are arranged for exciting the drawn liquid by a forcible jet of liquid or air, after the receptacle has been filled. A flexible lining in a faucet is held closed by a spring arrangement, the depression of which permits the flow.

Several vertical pumps are arranged to work the piston in a lateral cylinder, communicating at top and bottom with the main tube. In double-action submerged pumps, ball and other valves are arranged in pistons, communicating with hollow piston rods. Several pistons in a pump are operated by as many rods, some being hollow and concentric with each other, and others independent. In others the valves are held in position, and a section of the tubing moves thereon.

Pumps for deep wells, generally making provision for the presence and escape of gas, are numerous. Detaching and withdrawing the operative parts, at whatever depth, by peculiar arrangements and movements of the rods, has attracted the attention of several inventors.

The appliances for inducing the flow of oil by the pressure of hot or cold air or steam, are numerous and varied. Heat is also applied in different ways to render the oil fluent. Supplemental tubes are also applied for the escape of gas from the pump tube.

A rotary pump has its pistons guided by central cams; another receiving its water centrally beneath, expels it, by concave extension wings, through a scroll.

A horizontal rotary air-pump is enclosed in a casing kept more than half full of water, the buckets being so curved that when their outer extremities strike

the water they enclose each a volume of air, the compression of which upon the surface of the water forces it through a tube, whence it flows out through a hollow end of the shaft. In an air-pump of vertical movement water is used as the medium of forcing air from an adjoining chamber, the receding of the water causing the induction air-valve to open again.

Deep well tubes are packed by means of the inflation or lateral expansion of flexible packing in lieu of the seed bags in former use, through which packings, in some instances, auxiliary tubes are conducted.

Pistons are packed by the flow of water through their sides, and the consequent expansion of their peripheries.

Class L.—Leather and Harness.

Numerous improvements have been made during the year in the diversified and complicated machinery used in the manufacture of boots and shoes.

Some of these machines seem to cover almost the entire process; all tend to perfection by a series of experiments and improvements. In nearly every stage of the manufacture separate pieces of machinery have been made to do their work. By the proper appliances and the use of machinery the leather is reduced to any desired thickness and pliability, and the lasts are so shaped that the boot or shoe can be made upon them to fit as close and smooth as a glove upon the hand.

Such, in fact, has been the advancement in the improvement of machinery for cutting the leather into shape, lasting it, putting the parts in position, and pegging, nailing, and sewing them together, and then trimming, burnishing, and finishing the work, that in many establishments shoes are turned off, during the working hours, at the rate of one pair a minute, complete. Important improvements, and answering an excellent purpose, have been made by attaching India-rubber soles, and rubber and leather combined, to leather uppers, by sewing and cement, while sabots, wooden soles, attached by screws and rivets, have been much improved.

The improvements in hand tools for the use of shoemakers and saddlers are very marked for their increased simplicity, compactness, and aid in the saving of labor. In the manufacture of harness, saddles, stirrups, bridles, trunks, carpet and mail bags, many new and ingenious arrangements, uniting simplicity with comfort and increased safety, have been made. Snap-hooks, buckles, skates, ice-creepers, &c., have also employed the attention of inventors, and many novel combinations patented, combining simplicity and cheapness with better adaptation.

Class M.—Lumber.

In this class there were 331 applications received during the year, of which twelve were for reissue, and three for extension.

Of this number, 179 have been patented, or ordered to issue, leaving 152 either rejected or waiting the further consideration of the applicant. The 179 patents in this class issued during the year are distributed as follows:

Saw-mills, 6; head-blocks for saw-mills 2; sawing machines, 24; circular sawing machines, 3; saws, 4; shingle machines, 8; cork-cutting machines, 5; planing machines, 5; mortising machines, 3; turning lathes, 6; wheelwrights' machines, 8; barrel machines, 2; veneer cutters, 1; wood splitting, 6; blind wiring, 3; tools, 45; and miscellaneous, 13.

No great leading idea has been developed in this class of inventions during the past year; the applications are confined to devices that make the machines they improve either better or cheaper. Forty years ago nearly all the work in a saw-mill was done by a reciprocating upright saw, working at slow speed; but now the saw must reciprocate at a higher rate of speed, (if such saw is used.) The main part of the sawing is now done by large circular saws, which reduce the cost of the mill in its details, and experience has shown that mills

should be constructed so as to be movable; since, unless the timber can be floated to the mill in water, it is easier to carry the mill to the timber than the timber any considerable distance to the mill.

In wood-bending there has been much done, for in constructing large vessels timber is used differing in shape from its natural growth, which is changed in shape to suit the wants of the constructor by the powerful machines now used for such purpose.

In barrel machinery there has been a great change; since the immense production of petroleum, oil has to be mainly transported in casks of wood; the inventions are mostly for cheapening the manufacture, as well as strengthening the cask, and by sawing the stave to the shape it is to have when in the barrel, which makes a stronger cask, because none of the strength of the hoop is expended in clamping the stave to its shape.

In boring machines some improvement has been made, in one direction, by boring a square hole with a tool, all whose devices revolve therein; and in another direction, by having a series of annular cutters attached to a tool for boring at the same time a number of tubes or pipes.

Class N.—Mathematical and Philosophical Instruments—Electricity, &c.

A great diversity of subjects is usually presented in this class of inventions, but electricity claims much the largest share of attention. It is remarkable, also, that the proportion of electrical inventions increases every year. During the year 1865, of 234 applications in this class, 82 were upon electrical and magnetic subjects; 34 upon clocks and watches, and 118 of a miscellaneous character.

Hitherto the applications of electricity and magnetism for remedial purposes have been referred to Class O of Surgery, but it has been thought best to make a distinct subdivision of such inventions, under the head of Electro-therapeutics, and transfer them to Class N, for the reason that, in almost all such cases, the decision upon the claim involves inquiry into electricity and magnetism rather than surgery or medicine. These are not included in the above estimate. It may be a surprise to some to learn that the subtile agent of electricity is playing such an extensive part in the theatre of practical mechanics, and that up to the year 1857 more than five thousand patents had been granted, in England alone, for various applications of electricity to the arts, and since that time probably half as many more.

Prior to 1857 upwards of three hundred patents had been granted in England on the subject of electrical cables and conductors for telegraphs, and since that time probably more than that number. It cannot be expected that a single year will bring about many striking developments in electrical science or its application to the useful arts; but the past year has not been unfruitful in this respect. Improvements in electric printing telegraphs have been patented, giving evidence of the highest order of mechanical genius; and also some improvements in the galvanic battery of great practical value.

Since the introduction in electric telegraphy of communicating or rather reading the telegraph by sounds instead of visible signs or imprinted characters, it has become an object to devise means by which the audibility of the sounds would be increased.

To this end the receiving magnet is supported upon a sounding box, through which a tension rod passes, and is so arranged that the sonorousness of the box is varied at pleasure by means of an adjusting screw. These magnets are technically termed sounder magnets, and as they are for the most part the re-

ceiving magnets—that is to say, the fine wire magnets—the printing or registering local magnet is now generally out of use. In fact, in most of the lines of tele graph of the present time the only feature of the Morse telegraph preserved is the alphabet, and this is now an alphabet of sounds instead of characters. After several years of practice the telegraph operators who read by sound become so expert that the continual click of half a dozen different sounders in the same room does not interfere with the reading of their own, and they will even carry on a conversation with a bystander while receiving and committing to writing the telegraphic message.

However desirable such a mode of operating, it is nevertheless liable to frequent errors, and should, and will finally, give place to printing telegraphs for important business and monetary transactions. One of the contingent disadvantages of the phonetic telegraphy is the liability of disclosure to other parties who may be near enough to hear the sounds. For the purpose of obviating this evil, several patents have been taken out for confining the sounds within certain limits accessible only to the operator himself.

A phonetic telegraph has also been patented in which a continuous sound is interrupted or modified to indicate the signs or alphabet.

One of the most interesting developments pertaining to magnetic telegraphy is a mode of making the fine-wire receiving magnets of naked wire, instead of wire covered with silk, as hitherto practiced. No insulating material in the wire is used, except between the different layers. Strange as it may appear, a more perfect insulation is attained than by wire covered with silk or cotton and varnished. The wires are laid in the coil by accurately working machinery in such manner as not to be absolutely in contact, although to the naked eye they appear to touch. The spaces appear very plainly under a small magnifying power, and this space offers the very best medium of insulation. By this ingenious contrivance the wires are brought closer to each other than when covered with silk, and the difference is so great that in a common sounder or receiving magnet, twelve more turns can be wound on one length of the coil than before. Although this is a very decided gain in favor of the efficiency of the coil, it is not all, for a great saving is effected by dispensing with the silk covering, which is very expensive.

Another improvement in phonetic telegraphs has been patented, exhibiting a great deal of ingenuity and scientific study, in which the deflections of a magnetic needle are made to produce the sounds which are magnified by a peculiar acoustic arrangement so as to become audible to the operator.

In connection with this telegraph an ingenious and very novel self-regulating apparatus is introduced by which the current is maintained at a uniform strength, and at the same time susceptible of adjustment so as to vary the strength at leisure.

Electro-Therapeutics.

While it is refreshing to witness the unabated ardor with which the genuine applications of electricity and magnetism are prosecuted to practical results, it is a matter of regret to find so much empiricism pervading the community in reference to the remedial virtues of the subtile agent. With many it seems to be the panacea for all "ills that flesh is heir to." Electricity as a remedy now takes a very high rank, and has done incalculable service to suffering humanity under judicious administration; and electro-therapeutics has been elevated to a science almost as exact as any other branch of medicine, especially by the French physicians; but, like every other branch of the healing art, is liable to abuse and productive often of mischief in unskilful hands. Among the curiosities of this class calculated to appeal to popular belief in electrical marvels are such inventions as electrical and magnetic combs, brushes, bracelets, spectacles, pen-holders, trusses, beer glasses, soles for shoes, gymnastic clubs, &c.

Class P.—Electro-Chemistry, &c.

Electricity is still the resort to account for the explosion of steam boilers, but in every instance the rationale is not in full accordance with existing laws. A patent has been granted for preventing scale or incrustation of steam boilers by an arrangement of conductors said to have an electrical function. The invention was claimed by contesting parties, and on both sides numerous affidavits from creditable sources were brought to prove the genuineness of the discovery, which is one of inestimable value if fully realized.

Electricity and magnetism have also been enlisted in petroleum mining, and a patent granted for introducing heat into the shafts, for softening the paraffine adhering to the walls of openings by means of coils of platinum wire enclosed within a copper case and heated by the galvanic current, thus permitting the unobstructed flow of petroleum.

A patent has also been granted for electro-magnetic "grab-irons," to be let down into the shafts and seize and bring up pieces of broken drills and bits of iron or steel.

Insulators for Telegraphs.

Several patents have been granted for insulators for telegraph wires, all aiming at one point, viz: the extension of the insulating surface between the point of suspension of the wire and the insertion of the hook upon which the wire is suspended, and also to cover this surface, as far as possible, so as to prevent the deposition of moisture upon it. It is somewhat remarkable that notwithstanding the many devices patented in this and former years, for this purpose, nearly all the telegraphic lines of the present time are supported upon the old bell insulator of glass, the very first kind used in this country.

Clocks and Watches.

Number of applications, 34. The prevailing features of improvement have been contrivances for winding up the watch and setting the hands without the use of a key, and quite an interesting variety of inventions has been patented for this purpose.

Also patents have been granted for devices by which all risk of breaking the works by winding up too tight is avoided, and also by which the train is saved from injury in case of a rupture of the mainspring. Watches and timekeepers have been improved more within two or three years past than in any equal period of their history, and the introduction of chronometer movements into watches for the pocket has been perfectly successful. In this connection a patent has been granted for a very ingenious and accurate movement in which the introduction of an additional pallet, in conjunction with a movement patented last year, operates to dispense with the holding spring common in chronometer movements.

Class O.

Of this class 31 applications have been for improvements in artificial limbs, 21 for improvements in dentistry, and 112 of a miscellaneous character.

The havoc of war has begotten a multitude of inventions to supply the place of amputated arms and legs, and from among the mass some may be selected as examples of skill and successful operation.

One inventor heralded his application by the introduction of a lad wearing his artificial leg, who had learned to run and to skate; another, a soldier, sent a letter to the office written by an artificial hand and arm of his own invention.

The chirography was rough but legible. Other remarkable performances might be cited to show that artificial limbs have been brought to a high state of improvement, and that the United States are in advance of other countries at present in regard to this invention. Some of the legs and arms presented are of beautiful finish and model, and one of the substantial improvements is in the material by which very strong limbs are made with very little weight. The legs have attained nearer to perfection than the arms or hands. In one instance the several motions of flexing and extending the arm and fingers has been very successfully accomplished by the several motions that could be made by a stump of the humerus or upper arm.

In dentistry one of the most notable improvements patented is the introduction of aluminum for the base-plate of artificial teeth. The greater lightness of this metal, its freedom from oxidation, and its comparatively low price give promise of a great reform in this branch of art. Perhaps no invention of the present day illustrates more beautifully the application of chemical science to the mechanical arts than the introduction of vulcanite or hard rubber as the base-plate for artificial teeth. While this material can be furnished at a trifling cost, it seems to be the very perfection of base-plates, offering facilities for moulding and attachment greater than metals, and being light, durable, firm, sufficiently elastic, and susceptible of coloring in imitation of the natural gums.

Conservative Surgery.

Under this head an interesting and important invention has been patented, by which the usefulness of the arm may be preserved to the patient after the operation of exsection or removal of a part of one or more of the bones of the arm.

Class P.—Metallurgic Manufactures.

Invention is the basis underlying all skilled labor, and must necessarily have been achieved, before skilled labor became possible. Invention is the product of work performed by the brain; a house, a machine, or a railroad is the product of physical labor, or of work done by the hand. Once invented, the construction of any one of these becomes easy, for nothing is then wanting but the manual labor and the directing skill of the workman.

It is true that, without human wants to call it forth, skilled labor to make it available, and proper conditions under which to apply and develop it, invention, though possible, would at this time be restricted to very narrow limits; but it is also true, that invention, thus stimulated, and by these means developed to the wonderful extent which we now behold, has with equal force reacted upon these very means or conditions, and caused new wants to be made known and new aims to be aspired to, by the very confidence with which it has come to be depended upon to supply all needful ways and means.

This latter remark is forcibly illustrated by the inventions of the class now under consideration, in their relations to very many of the industrial arts, and particularly to those which, by their great magnitude and the superior skill and intelligence required in their development, are justly regarded as being at once the greatest civilizing agents, and as leading the way in material and social progress.

As at present constituted, the class of metallurgic manufactures includes branches to a certain extent distinct from one another, of which the principal or most important are—

1st. Founding, or the process of casting, and, included therewith, the form and construction of moulds, flasks, &c.

2d. Machines of general application, such as those for forging, rolling, planing, boring, punching, shearing, &c.

3d. Machines for the manufacture of articles of sheet metal, for cutting, bending, stamping, spinning, riveting, &c.

4th. Machines adapted exclusively to certain special uses, as to the manufacture of nails, bolts, nuts, screws, needles, pins, files, chains, horseshoes, &c.

5th. Tools and implements of every description required in the construction of machines and in the fabrication of metallic articles.

To confirm what has been said as to the importance of this class of inventions, one has only to answer to himself this question—what would be, at the present time, the condition of labor, of the industrial arts, of individual and national wealth, or even of civilization, had invention in this department remained stationary at the point to which it had attained fifty, or even twenty-five years ago?

Of the inventions patented during the past year, none can be considered remarkable for superiority over similar inventions of previous years, although there is very evidently a general and progressive improvement; but what is remarkable is the greatly increased number of applications for patents received during the past year.

In illustration of this, the following statement is submitted, showing the total number of applications in this class received yearly during the last four years, viz:

For the year ending December 1, 1862	349
For the year ending December 1, 1863	381
For the year ending December 1, 1864	615
For the year ending December 1, 1865	1,005

Class R.—Navigation.

The inventions in this class patented during the past year do not present any especially remarkable features, nor has the number of applications exceeded those of former years so much as in the other divisions. One hundred and forty-three applications were filed, and one hundred and eleven patents issued.

Class S.—Steam Engines.

The number of cases received in this class during the year was 517; the number rejected was 150; and the number passed for issue, 392.

The subjects which seem to have engrossed the minds of inventors in this class principally for the last year are steam generators, balanced slide valves, piston-packing, automatic boiler feeders, air and gas engines, and oil ejectors for oil wells. In steam generators some marked improvements have been made, among which may be noticed some for the instantaneous generation of steam by injecting a given quantity of water into a highly heated receptacle, which water is injected in a finely comminuted form, and flashed into steam without coming in contact with the sides of the receptacle. Others are for the better combustion of the fuel consumed, and consist of devices for burning the gaseous products of combustion.

In slide valves the object seems to be to perfectly balance the valve under all circumstances, whether admitting or exhausting steam; in some of these, provision is made for the direct exhaustion of steam through an aperture in the back of the valve.

The improvements in piston-packing consist in arrangements for keeping the packing in contact with the cylinder, and for the more accurate and better construction of the joints, to prevent leakage of steam. One important feature in such packing consists in making provision for applying it to horizontal engines without disconnecting the piston rod from the cross-head, or without taking the piston out of the cylinder when one end only of the cylinder is accessible.

In automatic boiler feeders the object aimed at, is to so construct them so that they will elevate the water from a well or other reservoir, and supply it to the boiler

in such measured and exact quantities as that the water level in such boiler will be constantly at a given point, and thus prevent liability of accident from low water.

In air and gas engines the improvements are various, and in some cases important. They consist, in one class, of improvements designed to adapt them to the consumption of petroleum as fuel for heating the air to be used in the cylinder. In another class they consist in arrangements for conducting the products of combustion, mingled with a given quantity of steam, to the cylinder, there to be worked expansively for the production of motive power. In another they consist in arrangements for the manufacture of gas from petroleum and other light volatile oils, and for conveying such gas to the cylinder, where by means of an electric spark, or by means of a burner placed in a proper position, it is exploded, and its explosive force is utilized by the piston and caused to propel the machinery attached thereto.

In ejectors for oil wells, in which steam or compressed air is used as the agent to force out the oil, the improvements are varied, and consist in devices constructed upon the general principle of the Giffard injector, but are adapted to the limited space in which they are of necessity operated. These ejectors may properly be divided into two classes, one of which is more particularly adapted to the use of steam as the propelling agent, and the other to the use of compressed air as such agent.

In the first of these the instrument is at or near the bottom of the well, and steam is conveyed to it from a generator placed upon the surface, and through a pipe passing down through the seed bag or other packing of the well, sometimes within and sometimes without, but alongside the discharge pipe.

This steam induction pipe is curved at the bottom so as to give the steam an upward direction within the discharge pipe for the oil, by which means a partial vacuum is formed, and the oil rushes in and is forced up and out at the upper end of the oil pipe.

Those designed for the use of compressed air are constructed and operated in the same manner, except that they are connected with an air-compressing pump, which is capable of so compressing the atmosphere as to give it the required force for elevating the oil.

In reciprocating and rotary engines, steady if not rapid progress is being made in improving them, but these consist in the general arrangement and adaptation to certain positions and kinds of service rather than to marked improvements in their details.

In trunk engines a very marked feature is the placing of the working or induction and eduction valves, which are cylindrical in form, within the trunk, thus rendering the engine more compact and less complicated than the old form of engine.

In relation to condensers, all inventors seem to be, if not strictly orthodox, at least highly conservative, and as a consequence no very marked improvement has been made in them during the past year; but what has been done relates to modifications of the old plan and to the details thereof.

In steam and water gauges steady progress is being made, but no very marked change has been made in them recently. Considerable attention has been given to devices for removing scale from boiler tubes, several of which have been patented within the year.

With reference to other and less important devices which are included in this class, no very marked improvements have been made. So far as the aggregate of improvement is concerned, it is believed to have been at least as great the last year as it has been in any preceding one; and it is proper to say that much has been done by the inventors in this class to improve the general character of the steam engine, as well as to promote their own interests by adding very materially to the general wealth and prosperity of the country.

Class T.—Glass, Stone, and Clay.

Some few modifications and improvements have been made in the making of glass and the tools for its manufacture. These are the most marked in the mere general substitution of machinery for hand labor, and in certain economical arrangements for the saving of fuel.

Various improvements are noticeable in the machinery for rock drilling. These principally consist of improved methods for rotating the drill, and the adjustment of it in a position more or less inclined, as the nature of the work may require.

In the machinery for the manufacture of brick, as well as the mode of preparing the materials out of which brick and tiles are made, there have been some improvements. In the apparatus for moulding the brick there is an expedient for getting them out of the moulds and into a position where they can be readily grasped by the hand and carried away, being lifted entirely out of the mould on the bottom of the same by the use of a stationary cam. The bottom is movable and on hinges, and so arranged as to throw the brick over on its thin edge.

Lime-kilns, stone-dressing, and sawing machines, clay and cement pipe machines, as well as the tools they require, have also drawn the attention of inventors, and show a decided improvement over former devices.

Class U.—WearingAp parel.

In nothing relating to health, comfort, convenience, or taste is so little creative genius manifested as in the habiliments or costume of the American people. In disregard of all their peculiarities, of the universality of industry among them, of the variations of climate in different latitudes and localities, and of the sudden and severe vicissitudes of temperature in many regions, we accept, from social classes in Europe having no existence here, prescribed forms or fashions of apparel characterized by little else than their inappropriateness to our uses, their confined and rigid discomforts, their lack of gracefulness in form and color, and their great expensiveness. In female attire, comfortless and extravagant as it is, there are at times some expressions of taste and some independence in design; but in the garments of men, even these are not ventured; and the whole nation submits to imported examples and prescriptions without a protest, although every individual possessing either taste or judgment gives daily utterance to the impatience with which he conforms to fashions alike arbitrary and irrational.

Shirt collars had attained to the conventional standard of perfection when they became square in outline, exceedingly white, stiff to hardness, and sized and pressed until the textile character of the fabric had become almost totally concealed. At this point it became evident that the manufacture was indebted for its excellence to its close resemblance to bleached and sized paper, the substitution of which for linen was consequently attempted. For a time the attempts were attended with but limited success, partly because the resistance of a strong popular repugnance had to be encountered, and partly because paper of the required quality was not found in commerce. The use of cheap cotton cloth between sheets of paper proved successful, and the new manufacture gained its way to public favor in this form. At length paper possessing all the desired qualities was produced, and a large proportion of the collars in commerce are now made from this material.

In the past year patents have been granted for a paper collar divided at the line of turning down, but having a strip of textile material on the hidden side to turn upon the band; and its ends are in another fashioned and colored to imitate a neck-tie beneath portions of the bands. Button-holes are enlarged for the admission of buttons; back of the seat of the button when fastened auxiliary bifurcated pieces of hard material are placed behind the button-hole. Bows re-

sembling neck-ties are attached to the front button by elastic bands, wires, or clasps. Collars are turned down upon a curved or straight line by being carried through a slot of such form by a blade of rounded edge, or prepared for such fold by the pressure of a blade of like character upon the collar when lying upon a cushioned surface. A paper collar and bosom are formed in one piece or separately. Shirt bosoms are also made of flexible enamelled steel.

In hoops for skirts, clasps are formed adapted to every desired bend of the hoop. The covered wire is sized by being carried around cylinders, between sizing rollers and over heated drums. The waists of ladies' dresses are gathered upon a hoop previously adjusted to the waist of the wearer, said hoop having a groove on its exterior; and an elastic band fitting therein holds the gathered material in position.

Suspenders are attached to the shirt or connected with the shoulder braces. Shoulder braces are connected to corsets and adapted to be worn by persons engaged at machine-sewing and other employments inducing a stoop of the shoulders.

There are several modifications of buttons united to the cloth by means of clamping disks upon the shanks; others are held to the cloth by means of tongues proceeding from the collet and turned down behind the cloth, and others by rivets.

Combs are formed of fragments of material embraced in metal backs, and framed in such manner that the frame may be repeatedly fitted with a comb thus formed.

A hat frame is constructed of a series of arched stays radiating from a common centre at the crown and fastened to a ring at the brim. An irregular enlargement is made in the rear brim to admit the air into the hat. In the manufacture of hats and bonnets the block is so arranged with gearing as to present every desired part to the operator, and an arm is extended and operated in like manner for the application of the brush or other tool.

A hat body is formed of two thicknesses of material, both having minute perforations, but which are not coincident. Hats and caps are formed of woven wire, to the outside of which a fabric may be glued. Hats and caps are covered with fabrics united by caoutchouc or gutta-percha applied by heat and pressure, and also by heated moisture.

Hat bodies are stretched by being placed on rib formers and elevated between small rollers, which press the yielding material inward between the ribs and thus extend the body. A flexible band, fitting the head, but smaller than the hat, has, at intervals, pins passing through it and through small cushions into the hat body, upon which they are turned down under the outer band, thus leaving an air space between the hat and head.

Hat-brushing machines operate the brushes upon a series of hats by a cam movement, supplying the requisite heated water through the brushes by an adjustable arrangement.

Hats of flexible material are expanded into shape by means of spring hoops inserted in the periphery of the brim and in smaller circles thereof, the application of concavo-convex wire forming a special modification of this invention.

T. C. THEAKER,
Commissioner.

No.	Patentee.	Invention or discovery.	Date.	Class.
7,896	Abbott, Theodore T	Tires for railroad car wheels	Jan. 24, 1851	X.
8,501	Adams, Benjamin F	Cutters, cheese, butter, and bread	Nov. 11, 1851	XVII.
8,477	Adams, Henry W	Zinc, white, use of steam to make	Oct. 28, 1851	IV.
8,091	Ahrens, Adolph F	Teeth, setting	May 20, 1851	XX.
8,092	Ahrens, Adolph F	Teeth, setting	May 20, 1851	XX.
8,282	Akins, William H., and J. D. Felthousen	Sewing machines	Aug. 5, 1851	III.
8,280	Akrill, John	Pottery and other ware, working clay for	Aug. 5, 1851	XV.
8,309	Allen, David	Washing machines	Aug. 26, 1851	XVII.
8,621	Allen, John	Teeth, mineral, setting	Dec. 25, 1851	XX.
7,897	Allen, John L	Carriage tops, raising	Jan. 14, 1851	X.
8,157	Allen, Nicholas Y	Harvesters, grain	June 10, 1851	I.
8,240	Ambrose, D. R., and O. L. Reynolds	Cloth-folding machines	July 22, 1851	III.
8,619	Ames, J., and G. L. Wright	Ruling paper, machines for	Dec. 23, 1851	XVIII.
8,169	Anderson, Charles	Boilers, revolving	June 17, 1851	VI.
7,981	Andrews, Elijah A	Trunk handles	Mar. 18, 1851	XVI.
7,905	Andrews, Joseph E	Steering apparatus	Jan. 14, 1851	VII.
7,865	Anthony, Charles G	Daguerrectype pictures	Jan. 1, 1851	XVIII.
8,502	Anthony, David, sen	Scythe fastenings, construction of	Jan. 1, 1851	I.
7,881	Armsly, Joshua M. C	Corn shellers	Jan. 7, 1851	XIII.
8,180	Armstrong, Samuel T	Gutta-percha hollow ware	June 24, 1851	IV.
8,732	Armstrong, Francis	Furnaces, grate bars for	Aug. 17, 1851	V.
8,147	Arnold, Alonzo C	Bats for felt cloth, &c., crossing the fibres in forming	June 10, 1851	III.
7,934	Ashcroft, E. H	Boilers, steam, insulated fusible plug for	June 10, 1851	VI.
8,198	Atwood, Charles	Hooks and eyes, wire	July 21, 1851	XXI.
8,136	Avery, Cyrus	Horse-power	June 3, 1851	XIII.
8,045	Avery, Samuel	Blind slats, apparatus for operating	Apr. 15, 1851	II.
7,950	Avery, Thomas C	Electro-magnetic engines	Feb. 25, 1851	VIII.
8,067	Babcock, Robert G	Horseshoe machine	Apr. 29, 1851	II.
8,320	Bacon, George, and Rd. Raven	Piano-fortes, horizontal, square	Aug. 26, 1851	XVIII.
8,196	Bailey, T. R	Lathes	July 1, 1851	XIV.
7,882	Baird, David	Mattresses, spring, for invalids	Jan. 7, 1851	XVII.
8,553	Baldwin, Cyrus, assignor to Stark Mills	Looms for weaving bags	Dec. 2, 1851	III.
8,049	Ball, Jonathan	Sight, means of renovating and correcting	Apr. 22, 1851	XX.
8,344	Ball, William	Gold amalgamator	Apr. 22, 1851	II.
8,602	Ball, William	Pumps for elevating water mixed with mineral substances	Sept. 9, 1851	XI.
8,821	Bishop, George G	Felting cloth, machinery for	Sept. 23, 1851	III.
8,381	Bannister, Isaac	Shoe latchets	Sept. 23, 1851	XVI.
7,951	Banks, Joseph	Buildings, iron, connections for the beams and columns of	Feb. 25, 1851	IX.
8,243	Bantz, Sidney A., and William Andrews	Mills for grinding corn and cobs	July 22, 1851	XIII.
8,125	Barlow, Nelson	Planing machines	May 27, 1851	XIV.
8,161	Barnes, William T	Washboards	June 17, 1851	XVII.
8,116	Barnhill, Jacob	Planters, seed	May 27, 1851	I.
8,195	Barnum, Daniel	Hat bodies, machines for making	July 1, 1851	XXI.
8,563	Barrows, Thomas	Cloth, machines for stretching and drying	Dec. 2, 1851	III.
8,262	Barsantee, John H	Knitting machines	July 29, 1851	III.

8,520	Bascom, Alonzo	Yarns, sizing and dyeing, apparatus for	Nov. 18, 1851	III.
8,603	Bass, William L.	Lock, chronometric	Dec. 23, 1851	II.
8,418	Batchelder, John M	Telegraph wires, insulators for	Oct. 14, 1851	VIII.
8,573	Beadleston, Ambrose S.	Furnace, revolving reverberatory	Dec. 9, 1851	II.
8,504	Bean, Jonathan	Winnowing machines, screens for	Nov. 11, 1851	I.
7,923	Beardsley, Backus A.	Stoves, cooking	Feb. 4, 1851	V.
8,098	Beardslee, George W.	Planing machines	May 20, 1851	XIV.
8,497	Beardslee, George W.	Planing machines	Nov. 4, 1851	XIV.
8,426	Beatty, Charles H.	Lock, door	Oct. 14, 1851	II.
8,503	Bee, Benjamin F.	Planes, hand	Nov. 11, 1851	XIV.
8,140	Beech, Ralph B.	Earthenware, baked, ornamenting	June 3, 1851	XV.
7,949	Beers, J. D., and Isaac Winslow	Planing machines	Feb. 25, 1851	XIV.
7,937	Beers, Philo S.	Irregular forms, machines for turning	Feb. 18, 1851	XIV.
8,574	Bell, Daniel D.	Potato diggers	Dec. 9, 1851	I.
7,883	Bennett, Phineas	Pumps, rotary	Jan. 7, 1851	XI.
8,137	Bessemer, Henry	Cane juice, machines for expressing	June 30, 1851	IV.
8,123	Biddle, William	Weighing machines for grain, self	May 27, 1851	XII.
7,898	Bigelow, Erastus B.	Looms for weaving piled fabrics	Jan. 14, 1851	III.
7,884	Bigelow, Erastus B.	Looms for weaving tapestry carpets with particolored warp	Jan. 7, 1851	III.
7,982	Bigelow, Erastus B.	Weaving, delivering particolored warps in	Mar. 18, 1851	III.
7,983	Bigelow, Erastus B.	Looms, jacquard, for weaving cut-pile fabrics	Mar. 18, 1851	III.
8,539	Bigelow, E. B.	Woven fabrics, wires for making pile in	Nov. 25, 1851	III.
7,899	Billings, A. M.	Hubs and axles, connecting and disconnecting	Jan. 14, 1851	X.
8,105	Bissell, Levi	Springs, carriage	May 20, 1851	X.
8,498	Bissell, Levi, assignor to Levi Bissell and Lyman Kingsley	Springs, carriage	Nov. 4, 1851	X.
8,086	Bixby, Rufus, Cyrus Bixby, and John Gaest	Planing machines	May 13, 1851	XIV.
8,184	Blanc, John	Hemp manufacture of, from okra	June 24, 1851	III.
8,440	Bliss, Alfred	Cans or cannister, tops of	Oct. 21, 1851	II.
188	Blodget, Sherbourne C., and John A. Lerow	Sewing machines	(Reissue)	
190	Boardman, Horace	Boiler, steam, and furnace thereof	(Reissue)	
8,215	Boardman, John	Washing machines	July 15, 1851	XVII.
8,102	Boardman, Luther	Spoon, manufacture of wire-strengthened	May 20, 1851	II.
8,575	Bogart, C.	Sounding boards for musical instruments, construction of	Dec. 9, 1851	XVIII.
8,441	Bogart, Charles A.	Stoves, air-heating	Oct. 21, 1851	V.
8,439	Bolen, John G.	Burglar alarms	Oct. 21, 1851	XXII.
8,442	Boone, Thomas G.	Ship's winches	Oct. 21, 1851	VII.
8,005	Boot, Henry	Cloth, machines for folding and measuring	Apr. 1, 1851	III.
8,508	Booth, Ezekiel, and Ezra Ripley	Car seats	Nov. 11, 1851	X.
8,033	Booth, Jonathan L.	Winnowing machines	Apr. 8, 1851	I.
8,114	Boyden, Otis	Alloys of iron, zinc, and nickel	May 27, 1851	IV.
8,068	Boynton, Leander W.	Bats for felting, making	Apr. 29, 1851	III.
8,287	Boynton, L. W.	Wool, machines for cleansing	Aug. 12, 1851	III.
8,242	Boynton, N. A.	Stoves, parlor cooking	July 22, 1851	V.
8,365	Brandeis, L.	Bronze powder, process of making	Sept. 16, 1851	IV.
8,404	Brett, Ephraim C.	Flocks, machines for opening and cleaning	Oct. 7, 1851	III.
7,959	Brewer, William, and John Smith	Paper moulds	Mar. 4, 1851	III.
8,133	Briggs, Joseph W.	Collars for harness	June 3, 1851	XVI.
7,965	Briggs, Luther, jr.	Hammers, trip, method of adjusting the stroke	Mar. 11, 1851	II.
8,142	Brown, Charles F.	Rudder, balanced	June 10, 1851	VII.
8,164	Brown, Charles F.	Masts and spars, telescopic connection of	June 17, 1851	VII.
8,269	Brown, Luther	Brick machines	Aug. 5, 1851	XV.
8,383	Browne, L. H.	Piano-fortes	Sept. 23, 1851	XVIII.

List of persons whose patents for inventions have expired, &c.—Continued.

No.	Patentee.	Invention or discovery.	Date.	Class.
8,319	Brown, Samuel	Kilns, lime	Aug. 26, 1851	XV.
8,421	Brown, William H	Baths, shower	Oct. 14, 1851	XX.
8,217	Browning, Edwin K	Mattress stuffing, &c., machines for cutting wood into shreds and crimping them for.	July 15, 1851	XVII.
8,464	Brooks, Merrit S	Augers, &c., to their handles, means for attaching	Oct. 28, 1851	XIV.
8,035	Broquette, Charles A	Calico printing, material for transferring colors in	Apr. 15, 1851	IV.
8,111	Brunk, Henry	Lap anvils for shoemakers	May 27, 1851	XVI.
8,266	Bryan, William H	Boats, to facilitate the discharge of cargoes, &c., fittings for	July 29, 1851	VII.
8,283	Bryant, M. C	Looms for weaving cut-pile fabrics	Aug. 5, 1851	III.
8,036	Buckingham, John, and Joseph H. Baird, assignors to Scovill Manufacturing Company.	Milling tool	Apr. 15, 1851	II.
8,443	Buffum, Arnold	Ore-washer	Oct. 21, 1851	II.
8,321	Bulkley, Charles S	Telegraphs, means for obviating difficulties arising from defective insulation.	Aug. 26, 1851	VIII.
8,340	Bulkley, Charles S	Electro-magnetic telegraph circuit, changes for	Sept. 2, 1851	VIII.
8,351	Burch, J. C	Forceps, dental	Sept. 9, 1851	XX.
8,246	Burgess, Joseph	Boot forms, machines for dressing	July 22, 1851	XVI.
8,006	Burnett, Marshall	Nail machine, horseshoe	Apr. 1, 1851	II.
8,073	Burt, Charles	Harpoon, exploding	May 6, 1851	XXII.
7,925	Burt, Enoch	Looms, power, fancy check	Feb. 4, 1851	III.
8,286	Bush, O. H	Spring bolt	Aug. 5, 1851	II.
8,554	Bushnell, William	Drill, hand	Dec. 2, 1851	II.
8,060	Bugbee, James R., assignor to James R. Bugbee and Enoch Robinson.	Lock and key	Apr. 22, 1851	II.
202	Calderhead, Alexander	Jacquard machinery for weaving all kinds of figured cloth	(Reissue)	
8,542	Carleton, George W	Stoves, cooking	Nov. 25, 1851	V.
8,014	Carr, J. M., and James Hughes	Bran-dusters	Apr. 1, 1851	XIII.
8,354	Carrington, Chester J	Hooks and eyes, fastening to paper cards	Sept. 9, 1851	XXI.
8,322	Carter, Henry, and James Reese	Nut and washer machine	Aug. 26, 1851	II.
8,081	Cavaillon, Florentine J. de	Gas, illuminating, purifying	May 6, 1851	IV.
8,200	Cavanaugh, L. F	Brushes and brooms, handles of	July 1, 1851	XVII.
8,310	Carver, Hiram	Cabbage cutters	Aug. 26, 1851	XVII.
8,165	Carver, Seymour	Shingles, machines for dressing	June 17, 1851	XIV.
3,384	Chambers, Benjamin	Stamps, letter	Sept. 23, 1851	XVIII.
8,339	Chapin, Nathan	Mills, cider	Sept. 2, 1851	XIII.
7,935	Champion, Thomas	Boiler, steam, annular	Feb. 18, 1851	VI.
8,330	Chapman, Thomas M	Saw-filing machine	Sept. 2, 1851	XIV.
7,966	Chapman, Henry D	Poles, machine for climbing	Mar. 11, 1851	VIII.
197	Cheney, Frank	Thread, machine for doubling, twisting, and reeling	Aug. 12, 1851	XIV.
8,288	Chichester, Lewis S	Staves, machine for jointing	(Reissue)	
8,141	Chichester, Lewis S	Carving machine	June 3, 1851	XVIII.
8,499	Chichester, Lewis S	Staves, machine for dressing	Nov. 4, 1851	XIV.
8,270	Childs, Augustus B	Winnowers and separators, grain	Aug. 5, 1851	I.
8,366	Chilson, Gardner	Stoves	Sept. 16, 1851	V.
7,952	Clapp, Edward, assignor to Edward Clapp and George Alden	Sad-irons	Feb. 25, 1851	XVII.

7,984	Clapp, E. S	Scythes to the snath, fastening of	Mar. 18, 1851	I.
204	Clapp, E. S	Scythes to the snath, fastening of	(Reissue)	
8,509	Clarke, Alvan	Telescopes	Nov. 11, 1851	VIII.
8,373	Clarke, George B	Churns	Sept. 23, 1851	I.
8,089	Clark, James M	Flouring apparatus	May 13, 1851	XIII.
7,985	Clark, Oliver	Scythe fastening	Mar. 18, 1851	I.
8,134	Claussen, Peter	Fibre, vegetable, process for treating	June 3, 1851	III.
8,055	Clay, William	Rods, tapered, metallic, apparatus for rolling	Apr. 22, 1851	II.
8,218	Clemens, S. A	Hemp, &c., machine for dressing Sisal	July 15, 1851	III.
8,408	Clements, William P	Seed-planter, devices for sowing in a	Oct. 7, 1851	I.
7,866	Cochran, Silas M	Car couplings	Jan. 1, 1851	X.
8,555	Cole, Cyrus C	Fences, hurdle	Dec. 2, 1851	IX.
7,867	Collan, John B	Pipe, lead, machines, nozzles for	Jan. 1, 1851	XI.
8,543	Collins, J. and J. J. G	Boilers, apparatus for steam	Nov. 25, 1851	VI.
8,323	Colne, John P	Glass, machine for cutting	Aug. 26, 1851	XV.
8,578	Conant, J. S	Gas regulators	Dec. 9, 1851	V.
8,367	Cone, N. F	Vice, bench	Sept. 16, 1851	II.
8,483	Constant, Isaac	Cultivators	Nov. 4, 1851	I.
8,556	Cook, Carlos A	Soda powders, &c., machines for crimping package papers for	Dec. 2, 1851	XX.
8,129	Cook, Horace, assignor to H. S. Cook and S. Colburn	Comb-cutting machines	June 3, 1851	XXI.
8,241	Cook, Samuel	Flour bolts	July 22, 1851	XIII.
8,298	Cook, Ransom	Ventilating and excluding dust from railroad cars	Aug. 19, 1851	V.
8,254	Coons, Mathias P	Fences, flexible	July 29, 1851	IX.
8,170	Cooper, John, administrator of Benjamin Giger	Ploughs	June 24, 1851	I.
8,148	Corliss, George H	Governors	June 10, 1851	XIII.
200	Corliss, George H	Cut-off and working the valve of steam engines	(Reissue)	
7,868	Cornell, William E	Planing machines for dressing the edges of boards	Jan. 21, 1851	XIV.
8,463	Cory, Myron	Seed-planters	Oct. 28, 1851	I.
8,028	Crane, Aaron D	Horse powers	Apr. 8, 1851	XIII.
8,022	Crosby, Pearson	Sawing machines	Apr. 8, 1851	XIV.
8,564	Crosby, C. O	Pins, mode of papering	Dec. 2, 1851	II.
8,202	Crosby, C. O	Pins, mode of papering	July 8, 1851	II.
8,007	Crosby, C. O	Pins, machines for sticking on paper	Apr. 1, 1851	II.
8,149	Crowell, Sommers	Railings	June 10, 1851	IX.
8,522	Curtis, S	Combs, machines for cutting	Nov. 18, 1851	XXI.
8,250	Cutler, Job	Metal tubes, method of liberating from forming mandrel	July 29, 1851	II.
8,077	Cutting, James A	Spark arresters	May 6, 1851	VI.
8,271	Dane, James, Darius Healy, and Gary Cummings, assignors to Isaac and Francis Dane.	Brick machine		XV.
8,297	Dare, John S	Shoulder-braces combined with abdominal supporters	Aug. 12, 1851	XX.
8,576	Davies, Thomas A	Cars, railroad, running gear of	Dec. 9, 1851	X.
8,299	Davis, A. R	Brushes, manufacture of	Aug. 19, 1851	XVII.
8,482	Davis, Isaac	Collars, horse, machines for forming	Nov. 4, 1851	XVI.
8,127	Dawes, Nathan, and Higgins Harrison	Boot-crimp	May 27, 1851	XVI.
8,100	Day, Horace H	Shoe, India-rubber	May 20, 1851	XVI.
8,044	Dennison, Andrew	Boxes, machine for cutting out the corners and scoring edges of paper for.	Apr. 15, 1851	XX.
8,521	Dodge T. H	Printing presses	Nov. 18, 1851	XVIII.
8,356	Douchet, G. F. de	Paint, manufacture of	Sept. 9, 1851	IV.
7,900	Dorwart, Joseph	Tuyeres	Jan. 14, 1851	II.
7,885	Draper, Francis	Inkstand fountain	Jan. 7, 1851	XVIII.
8,505	Drawbaugh, Daniel	Stave-jointing machine	Nov. 11, 1851	XIV.

List of persons whose patents for inventions have expired, &c.—Continued.

No.	Patentee.	Invention or discovery.	Date.	Class.
8,585	Drummond, J. W., assignor to Smith Ely	Chair seats	Dec. 16, 1851	XVII.
8,565	Duchemin, Daniel and George	Clay, machines for working	Dec. 2, 1851	XV.
8,219	Dugdale, Samuel G	Churns	July 15, 1851	I.
8,118	Durkee, George B	Carriages	May 27, 1851	X.
8,586	Dutcher, E. and W. W	Weavers' temples	Dec. 16, 1851	III.
8,143	Dutcher, Davis	Churns	June 10, 1851	I.
8,150	Eames, Albert	Stones and other substances, machines for facing and polishing	June 10, 1851	XV.
8,197	Eames, Daniel W	Carriages, railroad, running gear of	July 1, 1851	X.
8,255	Eddy, Thomas J	Wheels, cast-iron car	July 29, 1851	X.
8,163	Ellis, Rufus, assignor to William M. Chase	Knitting machines	June 17, 1851	III.
7,953	Engelbrecht, Theodore F	Hinge, double-acting spring	Feb. 25, 1851	II.
7,869	Ericsson, John	Water meters	Jan. 1, 1851	XI.
8,481	Ericsson, John	Engines, air	Nov. 4, 1851	VI.
8,579	Ericsson, John	Water meters	Dec. 9, 1851	XI.
8,063	Etnier, Oliver	Winnowing machines	Apr. 29, 1851	I.
8,088	Faber, George	Boilers, &c., steam apparatus for indicating the height of water in	May 13, 1851	VI.
8,361	Faber, George	Gauge for indicating pressure of steam	Sept. 16, 1851	VI.
8,025	Fagin, Lewis, and H. C. Hayman	Bolting flour, apparatus for	Apr. 8, 1851	XIII.
8,117	Farson, Enoch L	Swings, portable	May 27, 1851	XXII.
8,587	Ferris, Richard M	Organs and piano-fortes, combining	Dec. 16, 1851	XVIII.
7,918	Fields, William, jr	Hydraulic ram	Jan. 28, 1851	XI.
8,407	Fisher, Charles Frederick	Propeller, the endless chain	Oct. 7, 1851	VII.
7,870	Fisher, Daniel	Churns	Jan. 1, 1851	I.
8,239	Flanders, J. F	Pumps for raising water, &c	July 22, 1851	XI.
8,510	Flint, Jacob C	Hides, machine for cutting	Nov. 11, 1851	XVI.
8,261	Fonda, John C	Flocks, machine for grinding	July 29, 1851	III.
8,030	Foster, Celia R. P., late Celia R. P. Wood	Tables, ladies' work	Apr. 8, 1851	XVII.
8,331	Foster and Marsh, assignors to J. Foster	Wheels to axles, method of securing	Sept. 2, 1851	X.
8,484	Foster, N., G. Jessop, H. L. Brown and C. P. Brown	Seed planter	Nov. 4, 1851	I.
8,220	French, Oliver N., assignor to O. N. French and Eb. Stevens	Axle-boxes for journals for railroad cars	July 15, 1851	X.
7,938	Frye, John A	Tonguing, jointing and rebating tools for	Feb. 18, 1851	XIV.
8,409	Fulton, James	Escapement for timepieces	Oct. 7, 1851	VIII.
7,980	Gaines, Edmund P	Mill-stones, dressing	Mar. 4, 1851	XIII.
8,465	Gallahue, Alpheus C	Boots and shoes, machines for pegging	Oct. 28, 1851	XVI.
8,444	Gambrill, Horatio N	Cotton duck, dressing	Oct. 21, 1851	III.
7,967	Gardiner, P. G	Wheels, cast-iron car	Mar. 11, 1851	X.
7,968	Gardiner, P. G	Tires by continuous rolling, machinery for making	Mar. 11, 1851	II.
8,605	Gardiner, Perry G	Swaging machine, rotary	Dec. 23, 1851	II.
8,523	Gardner, George W	Stove-grate bars	Nov. 18, 1851	(Extended)
7,986	Gardner, James M	Casting the backs upon the teeth of currycombs, method of	Mar. 18, 1851	II.
8,362	Gardner, Smith	Sugar, apparatus for draining	Sept. 16, 1851	IV.
8,151	Gardner, William	Governors	June 10, 1851	XIII.
7,936	Garretsen, Isaac H	Looms, hand	Feb. 18, 1851	III.
8,341	Gavett, H. L. F	Fence, sod, machine for making	Sept. 9, 1851	IX.
8,389	Gilbert, T	Piano-fortes	Sept. 30, 1851	XVIII.

8,311	Gillett, Bethuel, and Lyman Allis	Presses, self-acting cheese	Aug. 26, 1851	XII.
8,069	Gilliland, Lewis L	Splint machines	Apr. 29, 1851	XIV.
8,348	Gillespie, G. W. C	Ploughs, wheeled, cultivating	Sept. 9, 1851	I.
7,871	Gilman, Samuel H	Valve, slide, method of connecting the, with the rock-shaft	Jan. 1, 1851	VI.
7,987	Gilman, Samuel H	Cut-off, adjustable	Mar. 18, 1851	VI.
8,466	Gilman, Samuel H	Bagasse, machines for drying	Oct. 28, 1851	V.
8,559	Goffin, F. C., assignor to Charles J. Gayler	Lock for safes, &c	Dec. 2, 1851	II.
8,524	Goldson, Henry	Ploughs	Nov. 18, 1851	I.
8,544	Goldthait, Elijah	Ploughs	Nov. 25, 1851	I.
7,927	Goodrich, Leonard	Ships, light	Feb. 4, 1851	VII.
8,080	Gorrie, John	Ice, process for artificial production of	May 6, 1851	XXII.
8,065	Goshen, Joseph G., and William H. Towers	Writing, apparatus for giving ease to the arm in	Apr. 29, 1851	XVIII.
8,363	Goulding, Henry	Stone-drilling machine	Sept. 16, 1851	XV.
8,268	Graham, William	Tuyere, tight joint for	Aug. 5, 1851	II.
7,973	Granger, Rensselaer D	Stoves, air-tight, Franklin	Mar. 11, 1851	V.
8,050	Grannis, Charles W	Stoves, cooking	Apr. 22, 1851	V.
8,093	Grant, Joseph	Brick presses	May 13, 1851	XV.
8,019	Grass, H., and William Campbell	Bedstead rails, machine for cutting screws on	Apr. 1, 1851	XVII.
8,352	Gray, James A	Piano-forte action	Sept. 9, 1851	XVIII.
8,284	Gregg, Isaac	Brick machines	Aug. 5, 1851	XV.
8,158	Gregg, Mahlon	Brick machines	June 17, 1851	XV.
8,345	Gregory, Alfred	Equalizers or power-regulators	Sept. 9, 1851	VI.
7,975	Greer, James, and Rufus J. King	Stoves, cooking	Mar. 11, 1851	V.
8,485	Griffith, Levi B	Iron, measuring and cutting	Nov. 4, 1851	II.
8,166	Griggs, George S	Locomotive, running gear of	June 17, 1851	X.
8,374	Grimes, Owen W	Hemp and flax, machines for scutching and hackling	Sept. 23, 1851	III.
8,375	Grosvenor, L. D	Broom corn, machines for stripping seed for	Sept. 23, 1851	I.
7,872	Grosvenor, Lorenzo D	Broom corn, machine for assorting	Jan. 1, 1851	I.
8,152	Guard, Chauncy H	Springs, carriage	June 10, 1851	X.
8,103	Guild, Charles M., and John Brown	Steam traps	May 20, 1851	V.
7,971	Guyer, Hugh	Window curtain fastening	Mar. 11, 1851	XVII.
8,257	Hall, William	Lock, bank, powder-proof	July 29, 1851	II.
8,422	Hammer, George	Corks, machine for cutting	Oct. 14, 1851	XXII.
8,486	Hammitt, John T	Desks	Nov. 4, 1851	XVII.
7,917	Hanley, James	Key swivel, nibbed	Jan. 28, 1851	II.
8,037	Hanon, Valcke E T	Mill-stones	Apr. 13, 1851	XIII.
8,204	Happersett, David J	Hooker-up, mechanical	July 8, 1851	II.
8,342	Hardaway, Mure	Spike machines, hook-heading motion for	Sept. 9, 1851	II.
8,525	Hardie, James	Propellers of machinery, to be used in currents	Nov. 18, 1851	XI.
8,332	Harris, C., and P. W. Zoiner	Stoves, double oven	Sept. 2, 1851	V.
7,902	Harris, Joseph, jr	Motion, changing reciprocating into a rotary	Jan. 14, 1851	XIII.
8,312	Harrison, James	Dental hydraulic cups	Aug. 26, 1851	XX.
7,988	Hastings, Eliakim M., and John Sheperdson	Looms, cylinders for figuring	Mar. 18, 1851	III.
7,920	Hathaway, Alfred	Pens for ruling paper	Jan. 28, 1851	XVIII.
8,445	Hathaway, John R., and John P. Strippel	Printing presses	Oct. 21, 1851	XVIII.
8,167	Hatch, Thatcher C	Ventilators	June 17, 1851	V.
8,245	Hawkins, William	Stave dressing machines	July 22, 1851	XIV.
8,588	Haussknecht, Gustavus L	Carriages	Dec. 16, 1851	X.
8,221	Haussknecht, Gustavus L	Springs, carriage	July 15, 1851	X.
8,159	Hayden, Hiram W	Kettles and articles of like character from disks of metal, machinery for making.	Dec. 16, 1851 (Extension)	
8,364	Hazard, E. W., and C. H. Jenner	Mill-stones, machines for dressing	Sept. 16, 1851	XIII.

List of persons whose patents for inventions have expired, &c.—Continued.

No.	Patentee.	Invention or discovery.	Date.	Class.
8,106	Hebbard, Albert	Wheels, cast-iron car	May 20, 1851	X.
8,056	Hedge, Samuel, assignor to George W. Hedge	Saw mills	Apr. 22, 1851	XIV.
7,994	Hefly, George, Samuel Conrad, and James Wigle	Ploughs, adjustable land sides of	Mar. 25, 1851	I.
8,205	Heineman, H	Buttons, silk-covered	July 8, 1851	XXI.
8,467	Hendrix, Davis R	Boot-trees	Oct. 28, 1851	XVI.
8,015	Heywood, Simeon	Wheels and axles, connecting and disconnecting	Apr. 1, 1851	X.
8,322	Hibbard, Harmon, assignor to Jared A. Hibbard	Buggy tops	July 15, 1851	X.
8,046	Hill, Charles F., and Henry Hoffman	Marble ornamenting	Apr. 15, 1851	XV.
8,144	Hill, Thomas W	Comb-cutting machine	June 10, 1851	XXI.
8,185	Hinds, William	Saw-set vise	July 1, 1851	XIV.
8,550	Hinkley, Benjamin	Trucks, railroad car	Dec. 2, 1851	X.
8,333	Hobbs, Charles	Stereoscope plates, moulding and casting	Sept. 2, 1851	XVII.
8,526	Hodge, Nehemiah	Wheels, railroad car	Nov. 18, 1851	X.
7,954	Hognet, Francis	Table, extension	Feb. 25, 1841	XVII.
8,272	Holden, Moore	Millstones, dressing	Aug. 5, 1851	XIII.
8,026	Holkins, Elijah S	Saw-set	Apr. 8, 1851	XIV.
8,008	Hollingsworth, John	Wheat fans	Apr. 1, 1851	I.
8,061	Hollingsworth, John	Smut machines	Apr. 22, 1851	XIII.
8,527	Hollingsworth, John	Mill for grinding and bolting	Nov. 18, 1851	XIII.
8,206	Holly, B., and J. B. Wheeler	Grooving lumber, machine for	July 8, 1851	XIV.
8,264	Horner, David	Seed-planters	July 29, 1851	I.
8,307	Hosley, Abijah S	Ships' model measurer	Aug. 19, 1851	VII.
8,087	Hoskyns, Chandos	Rudder, apparatus for relieving the helmsman from the shock of	May 13, 1851	VII.
8,606	Hotchkiss, Julius, assignor to the Hotchkiss and Merriman Manufacturing Company.	Suspenders	Dec. 23, 1851	XXI.
8,119	Hoyt, William H	Omnibus steps	May 27, 1851	X.
8,244	Hubbard, M. G	Springs, carriage	July 22, 1851	X.
8,540	Howe, Elias, jr	Fastening for garments	Nov. 25, 1851	XXI.
7,969	How, Thomas P	Trucks, connecting them with car bodies	Mar. 11, 1851	X.
8,193	Lazell, Almon E., and Davenport Lazell	Bread-cutters	July 1, 1851	XIX.
146	Hudson, S. A	Sword canes	(Reissue)	
8,130	Hulings, Margaret	Spinning wool, hand machines for	June 3, 1851	III.
8,607	Humiston, Willis	Candle-making apparatus	Dec. 23, 1851	IV.
8,138	Hunt, Marshall J	Planters, seed, gearing of	June 3, 1851	I.
8,300	Huntley, Hosea H	Stoves, cooking	Aug. 19, 1851	V.
8,541	Huntley, Hosea H	Stoves, cooking	Nov. 25, 1851	V.
8,355	Hurlbut, C. R	Gauges used in turning	Sept. 9, 1851	XIV.
7,928	Hurlbut, Sidney S	Harvesters, grain	Feb. 4, 1851	I.
8,131	Hutchins, Samuel B	Crank indicator, arrangement of machinery for actuating the	June 3, 1851	VI.
8,580	Hyde, Joseph, assignor to Thos. J. Eddy	Lathes, chucks for	Dec. 9, 1851	XIV.
8,608	Ingalls, Gustavus W	Æolian attachment	Dec. 23, 1851	XVIII.
8,487	Ingalls, J. K	Radiating surfaces	Nov. 4, 1851	V.
8,336	Irwin, William	Vessels, method of raising sunken	Sept. 2, 1851	VII.
8,289	Ison, Mark M	Spike machines	Aug. 12, 1851	II.
8,107	Jefferson, Purnel	Spike machines, gauging and heading movement for	May 20, 1851	II.

8,247	Jenkins, J	Gauges, feather edging for shoemakers	July 22, 1851	XVI.
7,974	Jenkins, Solon, jr	Daguerreotypes, seenring, in monumental stones	Mar. 11, 1851	XVII.
8,368	Jilson, A	Weavers' temples	Sept. 16, 1851	III.
8,402	Jimason, Alexander	Valves, shields for	Sept. 30, 1851	XI.
8,101	Jobson, Robert	Fireplaces, reflecting	May 20, 1851	V.
8,281	Johnson, John, assignor to Elias Johnson	Looms for weaving pile fabrics	Aug. 5, 1851	III.
8,511	Johnson, A. W	Felloes, bending	Nov. 11, 1851	X.
8,000	Jones, Gilbert D	Mills for grinding paints and drugs	Mar. 25, 1851	XIII.
7,906 / 191	Jones, John	Carriages	Jan. 14, 1851 (Reissue)	X.
7,924	Jones, Thomas W	Hides, machines for preparing	Feb. 4, 1851	XVI.
8,234	Jones, John	Carriage bodies, hanging	July 22, 1851	X.
8,236	Jones, John	Carriage bodies, hanging	July 22, 1851	X.
8,357	Jones, S. T	Iron, manufacture of	Sept. 16, 1851	II.
8,267	Jones, William R	Hubs for boxes, machines for preparing	July 22, 1851	X.
8,207	Jones, William	Harvesting machines	July 8, 1851	I.
8,273	Judd, Albert H	Indicator, water-level for steam boilers	Aug. 6, 1851	XI.
7,939	Judkins, Charles T.; patented in England to David Christie	Weavers' treadles	Feb. 18, 1851	III.
8,076	Kain, James R., and Spencer Lewis	Bedstead fastening	May 8, 1851	XVII.
7,873	Kaufman, Abraham	Quilting frames and apparatus	Jan. 1, 1851	XVII.
8,334	Kempton, James C	Drying and oxidizing colored goods	Sept. 2, 1851	IV.
8,427	Kenyon, William, assignor to Joseph P. Haigh, A. Hartupee, and J. Morrow.	Nut washers, &c., machines for making	Oct. 14, 1851	II.
8,353	Kerrison, R. M	Piano-forte action	Sept. 9, 1851	XVIII.
8,581	Ketcham, Charles	Saw-mills, feeding logs in	Dec. 9, 1851	XIV.
206	Ketchum, William F	Mowing machine	(Reissue)	
8,415	Killin, P	Ovens, portable elevated	Oct. 7, 1851	V.
8,545	King, Daniel	Sugar drainers, centrifugal	Nov. 25, 1851	IV.
8,446	King, James T	Washing apparatus	Oct. 21, 1851	XVII.
8,609	King, Lewis	Carriages	Dec. 23, 1851	X.
8,208	King, William	Cork-cutting machine	July 8, 1851	XXII.
7,921	Kinnear, Delamar	Lamps, lard	Feb. 4, 1851	V.
8,248	Kirk, S. W	Bran dusters	July 22, 1851	XIII.
8,512	Kitson, Rd	Card grinders	Nov. 11, 1851	III.
8,002	Klepfer, Henry	Piano-fortes, upright	Mar. 25, 1851	XVIII.
7,916	Knapp, Moses L	Supporters, abdominal	Jan. 28, 1851	XX.
8,020	Knight, George H	Paving, &c., stone and metal conglomerate for	Apr. 1, 1851	IX.
8,468	Knowles, S. W	Cradles, swinging	Oct. 28, 1851	XVII.
8,187	Kraft, Benjamin	Boxes and axles for saving oil	July 1, 1851	XIII.
8,038	Krauser, John	Buildings, iron	Apr. 15, 1851	IX.
7,995	Krebs, Charles W	Shutters, apparatus for securing, in any required position	Mar. 25, 1851	II.
8,350	Kreter, Randolph	Piano-forte, action	Sept. 9, 1851	XVIII.
7,874	Lamb, John, and C. H. Root	Wheels, spring, carriage	Jan. 1, 1851	X.
7,989	Lamson, Ebenezer G	Scythe fastenings	Mar. 18, 1851	I.
8,000	Lamson, Nathaniel	Scythe fastenings	Mar. 25, 1851	I.
8,003	Lamson, Nathaniel	Scythe fastenings	Mar. 25, 1851	I.
7,956	Lane, Abner	Irregular forms, machinery for turning	Feb. 25, 1851	XIV.
203	Larkin, Esther L., adm'x of John E. Larkin, deceased	Augers, method of attaching to their handles	(Reissue)	
8,469	Latourette, David L	Oil presses	Oct. 28, 1851 (Extended)	
8,347	Lawrence, Erastus	Washing machines	Sept. 9, 1851	XVII.
8,238	Lawrence, James A., assignor to Robert & Sampson	Harness, saddle-trees for	July 22, 1851	XVI.
8,193	Lazell, A. E, and D. Lazell	Bread-cutters	July 1, 1851	XVII.

List of persons whose patents for inventions have expired, &c.—Continued.

No.	Patentee.	Invention or discovery.	Date.	Class.
8,528	Lemmer, Adam	Cannon for throwing chain-shot	Nov. 18, 1851	XIX.
8,428	Levington, Robert	Axle-boxes for railroad cars	Oct. 14, 1851	X.
8,416	Lewis, Spencer	Bedsteads, machines for cutting screws on rails of	Oct. 7, 1851	XVII.
8,161	Lewis, Wililam, and W. H	Fastening pedestals to columns	June 17, 1851	XVII.
8,235	Lewis, William, and W. H	Daguerreotype plates, apparatus for buffing	July 22, 1851	XVIII.
8,513	Lewis, William, William H., and H. J	Daguerreotype apparatus	Nov. 11, 1851	XVIII.
8,590	Lewis, Wiiliam, and William H	Lenses, adjusting	Dec. 16, 1851	XVIII.
8,095	Leypold, Frederick	Scarificators	May 20, 1851	XX.
8,390	Litchfield, Laroy	Weavers' shuttles	Sept. 30, 1851	III.
8,047	Littlefield, Dennis G	Stoves, cooking	Apr. 15, 1851	V.
8,514	Livermore, Lorenzo D	Cars, railroad, coupling	Nov. 11, 1851	X.
8,391	Livingston, N. B	Weighing carts	Sept. 30, 1851	XII.
8,301	Long, Richard	Brick machines	Aug. 19, 1851	XV.
8,515	Lonsbury, Allen J	Supporter, abdominal	Nov. 11, 1851	XX.
8,039	Loper, Richard F., and John W. Nystrem	Steam engines	Apr. 15, 1851	VI.
8,447	Luttgens, H. A	Engines, apparatus for regulating the spaed of	Oct. 21, 1851	VI.
8,290	Lyman, A. S	Boilers, steam, water gauge for	Aug. 12, 1851	VI.
194	Lynch, Edward	Evaporators and condensers	(Reissue)	
8,566	Maginnis, James	Tailor's measure	Dec. 2, 1851	XXI.
7,886	Maguire, William	Staves, machines for jointing	Jan. 7, 1851	XIV.
8,529	Malo, Gaspard	Propeller, screw	Nov. 18, 1851	VII.
7,875	Manning, James	Candlesticks	Jan. 1, 1851	V.
8,040	Marsh, James S	Stoves, cooking	Apr. 15, 1851	V.
8,591	Marsh, Nathan B	Stethoscopes	Dec. 16, 1851	XX.
7,887	Marston, Stanhope W	Lock-fly, tumblers for fire-arms	Jan. 7, 1851	XIX.
8,023	Mason, Lewis J	Tables leaves, fastening down of	Apr. 8, 1851	XIV.
8,302	Mason, Nicholas	Ranges, cooking	Aug. 19, 1851	V.
8,417	Masserano, Clement, assignor to Clement Masserano, Josephine Wickliffe, administratrix of R. Wickliffe, jr., deceased, Charles Carenzi, André Crestadora, Pellegro Rocca, and Lewis B. Migene.	Locomotives moved by the power of animals	Oct. 7, 1851	X.
8,470	Mathushek, Frederick	Piano-fortes	Oct. 28, 1851	XVIII.
8,126	Maynard, Edward	Fire-arms, breech-loading	May 27, 1851	XIX.
8,224	McCallum, D. C	Bridge, counter-braces, adjusting the effective length of	July 15, 1881	IX.
8,256	McCarty, James	Boiler tubes, &c., spring expanding swage for	July 29, 1851	VI.
8,324	McCloskey, D. W. C	Lamps, self-acting blow-pipe	Aug. 26, 1851	V.
8,492	McConnell, W. P	Charcoal, manufacture of	Nov. 4, 1851	V.
8,016	McCurdy, David	India-rubber, manufacture of	Apr. 1, 1851	IV.
7,903	McFarlane, George R	Wheels, cast-iron car	Jan. 14, 1851	X.
8,124	McFarlane, Wm. A., and Thomas C. Carpenter	Bran-dusters	May 27, 1851	XIII.
8,314	McGregor, Geo., Robert Lea and Thomas G. Clinton	Padlock	Aug. 26, 1851	II.
8,010	McKinley, Peter	Hullers, rice	Apr. 1, 1851	X.
8,610	McLain, John	Harness, saddles	Dec. 23, 1851	XVI.
8,449	Meech, Charles L	Wind instruments, the mouth-piece for	Oct. 21, 1851	XVIII.
8,017	Mellish, Henry	Splint machines	Apr. 1, 1851	XIV.

8,303	Mercer, John	Fulling vegetable and other texture, chemical processes for	Aug. 19, 1851	III.
207	Merrick, Solyman	Screw wrench	(Reissue)	
8,376	Merrill, William	Lath machines	Sept. 23, 1851	XIV.
8,031	Merrill, Rosewell T	Grain separators and fans	Apr. 8, 1851	I.
8,450	Miller, James M	Sugar vacuum pans	Oct. 21, 1851	IV.
8,194	Miller, Michael	Piano-fortes	July 1, 1851	XVIII.
8,225	Miller, Sylvanus	Harvesting machines, rake to	July 15, 1851	I.
8,500	Milligan, Wm. B	Hides, bating and tanning	Nov. 4, 1851	XVI.
8,226	Milligan, Wm. E	Boilers, steam, management of the fines and water-spaces of	July 15, 1851	VI.
8,011	Monson, Charles	Blasting rocks	Apr. 1, 1851	IX.
8,265	Moore, Henry	Hubs for the reception of boxes	July 29, 1851	X.
8,561	Moore, Jos. H., and Wm. P. Parrott	Carriage, steam, for railings	Dec. 2, 1851	X.
8,392	Moore, William	Presses, self-acting	Sept. 30, 1851	XII.
8,546	Mortimer, Thomas H., and James M. Gardner	Rudders, method of operating	Nov. 25, 1851	VII.
8,335	Moulson, John	Photographic purposes, mercury bath for	Sept. 2, 1851	XVIII.
8,410	Murrill, James H	Locomotives, running gear of	Oct. 7, 1851	X.
8,451	Nebinger, William	Cars, railroad, running gear of	Oct. 21, 1851	X.
7,888	Neely, Edward	Harvesters, grass	Jan. 7, 1851	I.
7,889	Neff, Jacob	Electro-magnetic engines	Jan. 7, 1851	VIII.
8,424	Nesmith, John, and Wesley Sawyer	Shawls, &c., machine for twisting fringes of	Oct. 14, 1851	III.
8,110	Newbury, Bolivar	Jacks, lifting	May 27, 1851	XII.
8,516	Newcomb, Levi, jr	Bedsteads	Nov. 11, 1851	XVII.
208	Newell, Robert	Manifold permutation locks	(Reissue)	
8,145	Newell, Robert	Locks, permutation safety	June 10, 1851	II.
8,425	Newlove, William	Mills, grinding	Oct. 14, 1851	XIII.
8,078	Newman, Nelson	Pumps	May 6, 1851	XI.
8,452	Newton, Henry J	Piano-forte strings	Oct. 21, 1851	XVIII.
8,547	Newton, Orrin	Door-knobs, manufacture of	Nov. 25, 1651	II.
8,396	Nicholson, Thomas	Lock maze	Sept. 30, 1851	II.
8,315	Niles, Peter H	Tool haft, adjutable	Aug. 26, 1851	XIV.
8,611	Nims, Samuel D	Sashes, window, method of hanging	Dec. 23, 1851	II.
8,567	Noel, Theodore	Watches, winding	Dec. 2, 1851	VIII.
8,530	Norris, J. H., and D. Flanders	Desks	Nov. 18, 1851	XVII.
7,876	Northrop, Sheldon	Looms for weaving seamless bags	Jan. 1, 1851	III.
7,996	Norton, Michael	Sash lock	Mar. 25, 1851	II.
7,961	Nystrom, John W	Calculating machines	Mar. 4, 1851	VIII.
7,962	O'Neil, Bernard	Boilers, method of bracing the water spaces of	Mar. 4, 1851	VI.
97	O'Neil, John	Churns	(Additional improvement)	
8,153	O'Neil, John	Washing machines	June 10, 1851	XVII.
8,377	O'Neil, Patrick	Easy chairs for invalids	Sept. 23, 1851	XVII.
7,932	Osborn, John	Hydraulic rams, operating the waste gate in	Feb. 11, 1851	XI.
8,135	Osborn, Joseph	Sash stopper	June 3, 1851	II.
8,096	Osgood, James W	Coupling compound for hose or pipe	May 20, 1851	XI.
8,313	Ostrander, Jona F., assignor to A. B. and E. E. Hutchinson	Harrow, rotary	Aug. 26, 1851	I.
8,316	Otis, George W	Lighting-rods, insulators for	Aug. 26, 1851	VIII.
99	Pace, Henry, sen	Bedsteads	(Additional improvement)	
8,191	Paine, John P	Spectacle frames	July 1, 1851	VIII.
8,034	Paine, Rufus R	Stoves, cooking	Apr. 8, 1851	V.
8,227	Panton, William	Leather, machines for splitting	July 15, 1851	XVI.
7,910	Parker, E. T	Plough stock, convertible	Jan. 21, 1851	I.
8,429	Parker, James L	Water wheels	Oct. 14, 1851	XI.
8,398	Parsons, Lemuel H	Plotting scales	Sept. 30, 1851	VIII.

List of persons whose patents for inventions have expired, &c.—Continued.

No.	Patentee.	Invention or discovery.	Date.	Class.
8,128	Past, John C	Switch for railroads, self-adjusting and locking	June 3, 1851	X.
8,292	Pattinson, H. L	Pigments, manufacture of	Aug. 12, 1851	IV.
8,612	Patton, James M., and Wm. F. Fergers, assignors to John C. DaCosta.	Planing machines, cutters for	Dec. 23, 1851	XIV.
8,471	Pease, Webster H	Kettles with spouts, method of moulding	Oct. 28, 1851	II.
8,548	Peck, Milo	Presses, drop	Nov. 25, 1851 (Extended)	
7,890	Pennington, Cunningham M	Bridge-trusses, arrangement of arches in	Jan. 7, 1851	IX.
7,930	Pennock, Samuel, and Morton	Planter's seed, seeding apparatus of a	Feb. 11, 1851	I.
7,945	Pepper, John, assignor to Charles Warren and Horatio G. Sanford.	Knitting machines	Feb. 25, 1851	III.
8,172	Pepper, John, assignor to Horatio Crane, John Pepper, and J. G. Crane.	Knitting machines	June 24, 1851	III.
8,592	Pepper, John Paige	Jasper, mineral composition resembling	Dec. 16, 1851	XVIII.
8,506	Perry, George W	Looms, shuttle, motion of	Nov. 11, 1851	III.
8,304	Person, Ira B., and Joel L. Brocket	Omnibus drivers, registers for	Aug. 19, 1851	X.
98	Pfanner, Frederick	Dyestuffs from spent madder, preparation of	(Additional improvement)	
196	Phelps, James	Paper rags, machines for cleaning	(Reissue)	
8,531	Phillips, David F	Switch, railroad	Nov. 18, 1851	X.
8,549	Phillips, David F	Mills, cider	Nov. 25, 1851	XIII.
8,104	Pierce, Samuel	Furnaces, hot-air	May 20, 1851	V.
8,097	Platt, Nelson	Smut machines	May 20, 1851	XIII.
7,948	Pond, Moses	Ranges, cooking	Feb. 5, 1851	V.
8,210	Porter, P. W	Fire-arms, revolving breech	July 8, 1851	XIX.
8,582	Porter, Samuel	Ores, mineral, &c., arrangement of pans for washing	Dec. 9, 1851	II.
7,940	Post, William	Doors or shutters, attachment for opening or closing	Feb. 18, 1851	II.
8,171	Postley, Charles A	Frog-guard, self-acting	June 24, 1851	IX.
7,970	Potter, Nathaniel	Beehives, use of slides in	Mar. 11, 1851	I.
8,639	Pratt, Ulysses	Ivory, process of bleaching	July 6, 1851	IV.
8,405	Pratt, D. and R	Flocks to cloth, apparatus for applying	Oct. 7, 1851	III.
8,399	Prince, N. A	Pens, fountain	Sept. 30, 1851	XVIII.
8,113	Putnam, George W	Saw-filing machinery, vise-jaw for	May 27, 1851	XIV.
8,403	Putnam, Joseph	Clay pipes, manufacture of	Sept. 30, 1851	XV.
8,186	Race, W	Sash, upper, arrangement of catches in the, operated by moving the lower sash.	July 1, 1851	II.
8,387	Race, Washbourn	Fasteners, blind or shutters	Sept. 23, 1851	II.
8,557	Raines, William N	Switches, railroad	Dec. 2, 1851	X.
8,532	Redick, William	Seed planters	Nov. 18, 1851	I.
9,086	Ramos, Juan	Sugar, processes for the manufacture of	Apr. 29, 1851	IV.
9,087	Ramos, Juan	Sugar, apparatus for boiling	Apr. 29, 1851	IV.
8,453	Remy, Benjamin W	Excavating machines	Oct. 21, 1851	IX.
8,613	Renton, James	Iron wrought direct from the ore, apparatus for making	Dec. 23, 1851	II.
184	Reynolds, Edward	Felloes for the wheels of carriages and wagons, machine for setting or bending.	(Reissue.)	
8,051	Reynolds, James	Gutta-percha tubing and covering wire, machines for	Apr. 22, 1851	IV.
7,941	Rhoades, Philip, jr	Snatch-block	Feb. 18, 1851	VII.

8,478	Ricc, E	Baby-jumpers	Oct. 28, 1851	XXII.
8,094	Rich, Martin	Saw-mills	May 13, 1851	XIV
8,251	Richardson, Aaron	Oil-cups for journal boxes	July 29, 1851	XIII.
8,325	Richards, William T	Springs, machinery for forming joints of elliptical	Aug. 26, 1851	II.
8,369	Richardson, A	Leather and splitting machines	Sept. 16, 1851	XVI.
8,146	Richardson, Ithiel S	Churns	June 10, 1851	I.
8,593	Richards. David H., and Joseph F. Flanders	Locks, rotating tumbler	Dec. 16, 1851	II.
8,517	Rickey, Richard	Collars, horse	Nov. 11, 1851	XVI.
* 8,231	Riddle, John J	Brick machines	July 22, 1851	XV.
* 8,021	Riddle, John J	Brick presses	Apr. 1, 1851	XV.
8,533	Riley, William Willshire	Teeth, porcelain, inserting	Nov. 18, 1851	XX.
8,090	Ripley, Ezra	Hinge crane, for doors, shutters, &c.	May 13, 1851	II.
8,293	Ripley, Ezra	Grinders, method of forming teeth upon cast-iron	Aug. 12, 1851	XIII.
8,583	Ripley, E., and E. L. Brundage	Car seats	Dec. 9, 1851	X.
8,042	Robbins, John W	Saw-mills, setting logs in	Apr. 15, 1851	XIV.
8,174	Robbins, Jabez, assignor to Joel R. Morse	Horn and shell, machines for splitting	June 24, 1851	XXII.
8,491	Robbins, L. S	Paint oil from rosin	Nov. 4, 1851 (Extended)	
8,490	Robbins, L. S	Acid and naphtha from rosin, distilling	Nov. 4, 1851 (Extended)	
8,489	Robbins, L. S	Oil from rosin, lubricating	Nov. 4, 1851 (Extended)	
8,488	Robbins, L. S	Oil from rosin, tanners'	Nov. 4, 1851	IV.
8,419	Robbins, Zenas C	Telegraph wires, insulators for	Oct. 14, 1851	VIII.
8,480	Roberts, Cyrus, and John Cox	Grain, threshing and separating	Oct. 28, 1851	I.
8,112	Robertson, John	Lead machines, sheet, combination of dies for	May 27, 1851	II.
8,594	Rockwell, Francis A	Candlesticks	Dec. 16, 1851	V.
8,370	Rockwood, Levi R., assignor to Joseph L. Woodward	Last blocks, fastenings for	Sept. 16, 1851	XVI.
8,534	Rose, Hale R	Stoves	Nov. 18, 1851	V.
7,877	Ross, James P	Planters, seed	Jan. 1, 1851	I.
8,274	Root, James	Shutters for shop fronts	Aug. 5, 1851	IX.
8,493	Root, James	Stoves, folding doors of	Nov. 4, 1851	V.
8,052	Rowe, Bradford	Leather, machines for stretching	Apr. 22, 1851	XVI.
7,976	Ruck, John	Piano-forte action	Mar. 7, 1851	XVIII.
8,211	Rudd, William T	Designs in sheet metal, apparatus for punching	July 8, 1851	II.
8,535	Ruggles, H. J	Grates, stove	Nov. 18, 1851	V.
7,878	Ruggles, Stephen P	Printing presses	Jan. 1, 1851	XVIII.
8,388	Ruggles, Stephen P	Stamps, hand	Sept. 23, 1851	XVIII.
8,595	Russell, Charles W	Chimney caps	Dec. 16, 1851	V.
8,358	Russell, Ira	Bedsteads	Sept. 16, 1851	XVII.
7,879	Russell, Jonathan	Irregular forms, machines for turning	Jan. 1, 1851	XIV.
8,109	Ruttan, Henry	Furnaces, ventilating	May 20, 1851	V.
7,957	Sabin, H. W., and George Drew	Hinges, spring	Feb. 25, 1851	II.
8,190	Sabin, Harvey W	Bedsteads	July 1, 1851	XVII.
8,454	Salomon, John C. Fr	Saddles	Oct. 21, 1851	XVI.
8,536	Salomon, John C. Fr	Spring saddles	Nov. 18 1851	XVI.
8,558	Salomon, John C. Fr	Propelling and stecring, apparatus for	Dec. 2, 1851	VII.
8,577	Salomon, John C. Fr	Engines, carbonic acid gas	Dec. 9, 1851	VI.
7,904	Sangster, Hugh and James	Lamps, street, reflectors for	Jan. 14, 1851	V.
8,154	Sangster, Hugh and James	Lanterns	June 10, 1851	V.
8,371	Sargent, Charles G., and Robert Thompson	Waste-pickers	Sept. 16, 1851	III.
8,178	Sawyer, Sylvanus	Ratans, machinery for cutting, &c.	June 24, 1851	XXII.
185	Scarritt, Russell	Sofa bedsteads	(Reissue)	
7,908	Scheitlen, Jacob	Brick presses	Jan. 21, 1851	XV.
7,929	Schofield, Charles, and George J. Johns	Scraper	Feb. 11, 1851	IX.

List of persons whose patents for inventions have expired, &c.—Continued.

No.	Patentee.	Invention or discovery.	Date.	Class.
8,079	Schroder, Richard E	Kilns, lime	May 6, 1851	XV.
7,990	Scott, John, and John Tannahill	Jacquard machines	Mar. 18, 1851	III.
8,411	Scott, William	Boilers, revolving	Oct. 7, 1851	VI.
8,176	Selgrath, Jacob	Compounds, lubricating	June 24, 1851	IV.
187	Serrell, Alfred T	Mouldings, machinery for making	(Reissue)	
8,455	Severson, Benjamin	Wheels, cast-iron car	Oct. 21, 1851	X.
8,378	Sexton, Amos J., and William Ennis	Ships, ventilating	Sept. 23, 1851	VII.
8,308	Seymour, E. L	Ores, processes of reducing by zinc, compound	Aug. 26, 1851	II.
8,212	Seymour, William H	Harvesting machines, rakes to	July 8, 1851	I.
8,249	Shaler, Reuben	Dyeing door-mats	July 22, 1851	IV.
8,430	Sheetz, Edmund	Water-wheels, overshot	Oct. 14, 1851	XI.
201	Sherwood, John P., assignor to Calvin Adams	Door locks	(Reissue)	
8,326	Sherwood, John P	Cut-nail machines	Aug. 26, 1851	II.
8,362	Sherrod, Walter	Mandrels, expanding	Dec. 2, 1851	XIV.
7,891	Shields, James, and Samuel Pierce	Stoves, coal	Jan. 7, 1851	V.
8,259	Short, Sewall	Window-sashes	July 29, 1851	IX.
8,614	Shull, Thomas E	Tenpins, method of setting up	Dec. 23, 1851	XXII.
7,893	Simpson, Andrew L	Ox-yokes	Jan. 7, 1851	I.
7,892	Simpson, Samuel R	Vise, parallel	Jan. 7, 1851	II.
8,294	Singer, Isaac M	Sewing machines	Aug. 12, 1851	III.
8,550	Skinner, Franklin	Shingle machines	Nov. 25, 1851	XIV.
8,596	Skinner, Henry	Churns	Dec. 16, 1851	I.
8,431	Slaight, Thomas	Padlock	Oct. 14, 1851	II.
7,958	Sloan, Thomas J	Screw-blanks, machine for arranging and feeding	Feb. 25, 1851	II.
8,027	Sloan, Thomas J	Tenpins, apparatus for setting up	Apr. 8, 1851	XXII.
8,082	Sloan, Thomas J	Screw-blanks, &c., machine for assorting	May 6, 1851	II.
8,155	Sloan, Thomas J	Screws, method of finishing the heads of	June 10, 1851	II.
8,379	Sloan, Thomas J	Screws, machinery for threading wood, and feeding apparatus therefor.	Sept. 23, 1851	II.
8,397	Sloan, Thomas J	Screw-blanks and articles of a similar character, machine for arranging.	Sept. 30, 1851	II.
8,456	Sloan, Thomas J	Screws, machinery for shaving, nicking, and reshaving wood	Oct. 21, 1851 (Extended)	
8,615	Sloan, Thomas J	Screws and pins, machines for counting	Dec. 23, 1851	II.
186	Smith, Edward N., assignor through others to American Paper Folding Company.	Paper-folding machines	(Reissue)	
7,914	Smith, Elihu	Stoves	Jan. 28, 1851	V.
8,317	Smith, Horace, assignor to Courtland Palmer	Fire-arms, breech-loading	Aug. 27, 1851	XIX.
8,066	Smith, Ira H., assignor to Lemuel D. Smith	Matches, machinery for making	Apr. 29, 1851	XIV.
8,064	Smith, Joseph C	Saddles, springs	Apr. 29, 1851	XVI.
7,947	Smith, Marion	Musical instruments, bellows for	Feb. 25, 1851	XVIII.
8,551	Smith, William M	Engines, valve for oscillating	Nov. 25, 1851	VI.
8,252	Snow, Harvey, and Luther T. Smart	Fly-traps	July 29, 1851	XXII.
7,963	Snow, Henry H	Peppermint droppers	Mar. 4, 1851	IV.
7,955	Sours, William	Stoves, cooking	Feb. 25, 1851	V.
6,343	Southwood, Eli F	Sails, method of making	Sept. 9, 1851	VII.

7,942	Southworth, Daniel H.	Planing machines	Feb. 18, 1851	XIV.
8,401	Spear, Matthew	Mitre-boxes	Sept. 30, 1851	XIV.
7,998	Speers, N. W	Shutters, &c., apparatus for moving and securing	Mar. 25, 1851	II.
8,597	Speers, Noah W	Blind and shutter, operating	Dec. 16, 1851	II.
8,120	Spencer, James C	Carriages	May 27, 1851	X.
8,729	Spicker, Charles F	Gold, process for dissolving	Aug. 1, 1851	II.
8,043	Spoor, A. D	Grate-bars, agitating	Apr. 15, 1851	V.
8,337	Stanley, Edwin	Bridges, the construction of	Sept. 2, 1851	IX.
8,305	Stanley, Hartwell	Boot-crimps	Aug. 19, 1851	XVI.
8,616	Starks, Nathan	Bolt-heading machines	Dec. 23, 1851	II.
7,911	Starr, Charles	Embossing backs of books, tools for	Jan. 21, 1851	XVIII.
8,179	Starr, Charles	Books, machines for finishing backs of	June 24, 1851	XVIII.
8,537	Starr, Vine B	Gongs	Nov. 18, 1851	XVII.
8,182	Start, William H	Harvesters, grain	June 24, 1851	I.
8,053	Stearns, Charles W	Clogs, or pattens	Apr. 22, 1851	XVI.
8,237	Stearns, Charles W	Faucets	July 22, 1851	XI.
8,213	Stearns, John	Hats, machine for pressing	July 8, 1851	XXI.
8,228	Stebbins, Erastus	Faucets, or gates, molasses	July 15, 1851	XI.
8,507	Stegar, Joseph, assignor to William Mitchell	Boots and shoes, machines for cutting soles of	Nov. 11, 1851	XVI.
8,474	Stephan, Jacob, assignor to P. Augustus Sewarze and Jacob Stephan.	Cements, for grinding, cylinders	Oct. 28, 1851	IV.
8,553	Stevens, Francis A	Car-brakes, railroad	Nov. 25, 1851 (Extended)	
8,004	Stevens, Francis B	Valves, balanced	Mar. 25, 1851	VI.
7,999	Stevens, Richard F	Liquids, apparatus for drawing and measuring	Mar. 25, 1851	XI.
8,472	Stevens, Joel, and H. J. Ruggles	Stoves, dairy	Oct. 28, 1851	V.
8,412	Stevens, Joshua, assignor to Massachusetts Arms Company	Pistols, revolving breech	Oct. 7, 1851	XIX.
7,915	Still, Francis N	Patterns, mitre, or second, for casting	Jan. 28, 1851	II.
205	Stillman, Paul	Gauges, steam and vacuum	(Reissue)	
8,059	Stillwell, Rickason, and Edwin L. Brundage	Car seats	Apr. 22, 1851	X.
8,568	Stillwell, Lewis E	Carriage perches	Dec. 2, 1851	X.
8,074	St. John, John R., assignor to James Renwick, George T. Barnard, and E. B. St. John, trustees of the St. John's Compass and Log Company.	Hand-logs	May 6, 1851	VII.
8,085	St. John, John R., assignor to James Renwick, George T. Barnard, and E. B. St. John, trustees of the St. John's Compass and Log Company.	Velocimeters, aquatic, method of supporting the vanes of	May 13, 1851	VII.
8,214	St. John, James	Jacks, lifting	July 8, 1851	XII.
8,413	St. John, L. C	Dwelling, apparatus for warming air and water for	Oct. 7, 1851	V.
9,007	St. Johns, John R	Soap boilers	June 6, 1851	IV.
7,922	Storm, William Mt	Power, motive, method of obtaining	Feb. 4, 1851	VI.
8,070	Storm, William Mt	Vessels, flexible hose, or float, for supporting	Apr. 29, 1851	VII.
8,380	Storm, William Mt	Engines, in which compressed air or other gas heated and expanded by admixture therewith of a heated fluid is used as the motive agent.	Sept. 23, 1851	VI.
8,473	Stout, Thomas B., and James F. Morell	Yeas and nays, machines for taking	Oct. 28, 1851	XXII.
8,518	Stover, J. S	Kilns, grain	Nov. 11, 1851	VI.
8,032	Strait, Hiram	Saw-set	Apr. 8, 1851	XIV.
8,233	Strait, J. V	Motion, mode of changing reciprocating into rotary	July 22, 1851	XIII.
7,943	Straub, Isaac	Saw-mills	Feb. 18, 1851	XIV.
8,054	Strevell, William, and Daniel Brown	Leather, machines for stretching	Apr. 22, 1851	XVI.
8,569	Strode, Thomas T	Boring holes in posts	Dec. 2, 1851	XIV.
8,349	Sturgis, John J., assignor to H. H. Green	Type-casting machines	Sept. 9, 1851	XVIII.

List of persons whose patents for inventions have expired, &c.—Continued.

No.	Patentee.	Invention or discovery.	Date.	Class.
8,084	Sullivan, Jonathan	Straw cutters	May 13, 1851	I.
7,991	Surles, A. J	Beehives, construction of	Mar. 18, 1851	I.
8,328	Swett, James H	Spike machinery	Aug. 26, 1851	II.
8,494	Swiney, Edward	Dyeing blue, processes for	Nov. 4, 1851	IV.
8,457	Taft, George C	Box opener	Oct. 21, 1851	XXII.
8,519	Taylor, Isaac	Glass, frosting plates of	Nov. 11, 1851	XV.
7,909	Thatcher, George H	Stoves	Jan. 21, 1851	V.
8,232	Thatcher, George H	Fountain and evaporator combined	July 22, 1851	V.
8,263	Thatcher, George H	Stoves with portable ovens	July 29, 1851	V.
8,277	Thatcher, George H	Grates, quadrant-hinged	Aug. 5, 1851	V.
7,907	Thompson, Ambrose W	Propeller	Jan. 21, 1851	VII.
7,926	Thompson, Henry G	Packing of rotary engines, method of adjusting the	Feb. 4, 1851	VI.
7,997	Thorn, Lewis	Tables, extension	Mar. 25, 1851	XVII.
8,414	Thornley, O	Bedsteads, machines for cutting screws on posts and rails of	Oct. 7, 1851	XVII.
8,598	Thorp, Joseph W	Garments, apparatus for pressing	Dec. 16, 1851	XXI.
8,318	Tilton, David, assignor to Tilton & Sweetser	Padlock	Aug. 26, 1851	II.
8,458	Tilton, Joseph V	Stone, machines for dressing	Oct. 21, 1851	XV.
8,338	Tilton, Wm. B	Violins, &c., construction of	Sept. 2, 1851	XVIII.
7,992	Timby, Theodore R	Sad-irons, removable handles to	Mar. 18, 1851	XVII.
8,783	Tinker, Harris H	Suspender, encircling, for garments	Dec. 3, 1851	XXI.
8,538	Todd, George	Mill-stones, finishing and balancing	Nov. 18, 1851	XIII.
8,029	Todd, Wm., assignor to Charles Atwood and Geo. Kellogg	Jack-chains, tools for making	Apr. 8, 1851	II.
8,584	Tolhurst, G. W	Lath machines	Dec. 9, 1851	XIV.
8,406	Towle, Nathaniel C	Tanning	Oct. 7, 1851	XVI.
8,599	Tracey, Samuel F	Ores, copper, processes for smelting	Dec. 16, 1851	II.
8,360	Treat, James S., and Stephen Randall	Hemp and flax, machines for breaking and reducing the length of fibres.	Sept. 16, 1851	III.
8,276	Treat, Joseph C	Furnaces, hot-air	Aug. 5, 1851	V.
7,880	Trotter, Jonathan T	India-rubber, manufacture of	Jan. 1, 1851	IV.
8,420	Tucker, Hiram	Marble imitating	Oct. 14, 1851	XVIII.
8,617	Tucker, Richard S	Spinning rope-yarns	Dec. 23, 1851	III.
8,495	Upham, Joshua	Fires, compounds for extinguishing	Nov. 4, 1851	V.
8,156	Van Anden, William	Sugar-drainers, centrifugal	June 10, 1851	IV.
8,432	Vance, Elisha	Stoves	Oct. 14, 1851	V.
8,459	Van Every, Cornelius C	Seed planter, seeding apparatus of a	Oct. 21, 1851	I.
8,072	Vanderslice, Thomas	Meat-cutting machines	May 6, 1851	XVII.
8,108	Vankuran, Isaac	Wheels, cast-iron car	May 20, 1851	X.
8,173	Vaughn, Maria, administratrix of Joseph C. Vaughn, deceased, assignor to James C. Bell and R. Christie, jr.	Wheels, machinery for making iron	June 24, 1851	X.
8,395	Vaughn, Maria, assignor to Jas. C. Bell and R. Chrystie, jr	Wheel-tires, machines for making	Sept. 13, 1851	II.
8,600	Virtue, Edward	Tailors' measures	Dec. 16, 1851	XXI.
8,024	Wagner, J. Z. A	Brick presses	Apr. 8, 1851	XV.
8,012	Walker, Jabez	Lock in sheet metal, machines for forming	Apr. 1, 1851	II.
8,122	Walker, Paris M	Hemp-brakes	May 27, 1851	III.
8,460	Ward, Joshua O	Peeling and cutting peaches	Oct. 21, 1851	XVII.

8,278	Wardwell, George J	Looms, shuttles, motion of	Aug. 5, 1851	III.
7,933	Ware, Joseph E	Pavements, method of securing ranges of short plank in	Feb. 11. 1851	IX.
8,099	Ware, Lawton J	Cords, coupling for	May 20, 1851	III.
8,570	Warner, Chapman	Foundry apparatus	Dec. 2, 1851	II.
8,433	Warner, Chapman	Lamps for burning vapor of benzole, &c	Oct. 14, 1851	V.
8,229	Warner, James	Fire-arms, revolving breech	July 15, 1851	XIX.
7,894	Warner, James	Repeating fire-arms, means for revolving the breeches of	Jan. 7, 1851	XIX.
7,964	Waterman, Henry	Cut-off, variable, regulated by the governor	Mar. 4, 1851	VI.
8,115	Waterman, Henry	Saws, &c., machinery for hardening and straightening	May 27, 1851	XIV.
8,083	Watson, William E., S. Renwick, and P. H. Watson	Harvesters, grain and binders	May 13, 1851	I.
7,977	Way, Martin and Thomas R	Tenoning, boring, &c., machines for	Mar. 11, 1851	XIV.
8,475	Weaver, Richard S	Printing in colors, machines for	Oct. 28, 1851	XVIII.
8,436	Webb, John G	Lamps, solar, for burning lard or oil	Oct. 14, 1851	V.
8,437	Webb, John G	Gas burners, Argand	Oct. 14, 1851	V.
8,496	Webster, James	Springs	Nov. 4, 1851	X.
9,085	Websters, Daniel A	Cocks, with pipes connecting	Dec. 29, 1851	XI.
8,306	West, George	Pulp screens	Aug. 19, 1851	III.
7,895	Westacott, Robert G., assignor to Westacott, Lombard & Lombard.	Caviar, manufacture of	Jan. 7, 1851	IV.
8,275	Wetterstedt, C., assignor to Charles Keenan	Paint, metallic alloy	Aug. 5, 1851	IV.
8,601	Wheeler, Thomas B	Grain sieves	Dec. 16, 1851 (Extension)	
8,476	Wheeler, William	Curry-combs, construction of	Oct. 28, 1851	II.
8,618	Wheeler, William	Stone, machines for dressing	Dec. 23, 1851	XV.
8,372	Whipple, Milton D., assignor to Essex Company	Printing house paper, machines for	Sept. 16, 1851	XVIII.
8,001	Whipple, Heman	Brick, machines for preparing clay for making	Mar. 25, 1851	XV.
8,461	Whittaker, Lucius F	Cradles, swinging	Oct. 21, 1851	XVII.
8,434	White, Jonathan	Furnaces employed in welding shanks to tools	Oct. 14, 1851	II.
8,013	White, Jesse	Wheat fans	Apr. 1, 1851	I.
8,057	Whiteley, Edward	Coffee-roasters	Apr. 22, 1851	XVII.
8,400	Whiten, Elijah	Sawing volutes, machine for	Sept. 30, 1851	XIV.
8,188	Whitney, Henry, jr	Inkstands	July 1, 1851	XVIII.
8,189	Wickersham, J. B	Fences, iron	July 1, 1851	IX.
8,018	Wieting, Archibald	Planters, seed	Apr. 1, 1851	I.
8,295	Wilbar, Francis	Roofs, construction of	Aug. 12, 1851	IX.
7,912	Wilder, A. A	Lee-way indicator	Jan. 21, 1851	VII.
7,978	Wilder, A. A	Copying presses	Mar. 11, 1851	XVIII.
8,382	Willard, A	Churn and butter worker	Sept. 23, 1851	I.
7,993	Willard, Simon	Buildings, metallic, construction of	Mar. 18, 1851	IX.
188	Williams, Thomas R., assignor to J. B. Hyde	Bats for felting, &c., machinery for forming	(Reissue)	
189	Williams, Thomas R., assignor to J. B. Hyde	Bats in felting, &c., machinery for hardening	(Reissue)	
8,435	Williston, Gordin	Stoves, air-heating	Oct. 14, 1851	V.
7,944	Willoughby, I. D	Water, apparatus for raising and carrying	Feb. 18, 1851	XI.
8,462	Wilmot, George R	Water-closets, portable	Oct. 21, 1851	XXII.
8,296	Wilson, Allen B	Sewing machines	Aug. 12, 1851	III.
192	Wilson, Charles	Stone dressing	(Reissue)	
7,913	Wilson, jr., Daniel, assignor to Daniel Wilson, jr., and Henry M. Bird.	Nail machine, horseshoe	Jan. 21, 1851	II.
8,058	Wingo, T. F	Straw cutters	Apr. 22, 1851	I.
8,571	Winans, Ross	Locomotives, running gear of	Dec. 2, 1851	X.
8,359	Winters, George	Car, railroad, coupling	Sept. 16, 1851	X.
8,132	Wolf, David and Herman	Planters, seed, seed-distributor of	June 3, 1851	I.
8,048	Wood, John and William W	Iron, glazed sheet, process of manufacturing	Apr. 15, 1851	II.

List of persons whose patents for inventions have expired, &c.—Continued.

No	Patentee.	Invention or discovery.	Date.	Class.
8,479	Wood, S. W	Watering cattle, apparatus for	Oct. 28, 1851	XI.
8,230	Woodcock, Dennison	Staves, machines for sawing and dressing	July 15, 1851	XIV.
8,572	Woolman, Enoch	Gates, apparatus for opening and closing	Dec. 2, 1851	IX.
7,979	Woolston, George F	Saws, teeth of	Mar. 11, 1851	XIV.
8,393	Woolston, George F	Saws for sawing and smoothing boards	Sept. 30, 1851	XIV.
8,386	Worms, Jacob, assignor to J. Phalen	Printing presses	Sept. 23, 1851	XVIII.
8,183	Wright, Joseph	Washing-tubs	June 24, 1851	IV.
7,919	Wyllys, Newell	Spinning machines, drawing regulators for	Jan. 28, 1851	III.
8,604	Wyllys, Newell, assignor to Charles Collins and Newell Wyllys.	Leather tubes, machines for making	Dec. 23, 1851	XVI.
8,071	Yale, Linus, jr	Lock and key	May 6, 1851	II.
8,438	Yandell, John	Telegraphs, insulators for	Oct. 14, 1851	VIII.
8,279	Yerby, G. William	Ayes and noes, machine for taking	Aug. 5, 1851	XII.
8,160	Young, Elias	Stoves, cooking	June 17, 1851	V.
8,329	Young, Samuel S., assignor to J. R. Stephens	Calculating interest, rule for	Sept. 2, 1851	VIII.
8,620	Zimmer, Jacob	Bedsteads, attaching cutters for cutting screws on rails for	Dec. 23, 1851	XVII.

ALPHABETICAL LIST OF PERSONS WHOSE PATENTS FOR DESIGNS HAVE EXPIRED DURING THE YEAR 1865.

No.	Patentee.	Design.	Date.
1,044	Abendroth, William P.	Stove, cook's	Aug. 31, 1858.
1,001	Aikin, Herrick	Tool box	May 11, 1858.
1,060	Ball, T., assignor to George W. Nichols	Statues of Henry Clay	Nov. 9, 1858.
986	Barstow, A. C	Stoves	Jan. 19, 1858.
1,023	Barstow, A. C	Range fronts	July 6, 1858.
1,063	Barstow, A. C	Stove, cook's	Nov. 16, 1858.
1,013	Bates, R. H. N., assignor to himself, Isaac Backus, and J. P. Barstow.	Stove doors	June 8, 1858.
1,005	Beesley, J., assignor to John S. Clark and Washington Harris.	Stove doors	May 11, 1858.
1,056	Bennett, William	Shovels, cast-iron fire	Oct. 12, 1858.
1,008	Blanchard, A. L	Aquaria	June 1, 1858.
1,030	Bodine, J. F., assignor to himself and W. H. and Alfred Bodine.	Can covers	Aug. 3, 1858.
1,053	Briggs, Martin	Fences, cast-iron	Oct. 5, 1858.
985	Bruce, George	Types	Jan. 19, 1858.
1,006	Bruce, George	Types, set of printing	May 25, 1858.
1,014	Bruce, George	Types, printing	June 15, 1858.
1,033	Bruce, George	Type, printers'	Aug. 10, 1858.
1,054	Bruff, Richard P., and Charles and G. A. Seaver	Marks, trade	Oct. 5, 1858.
1,058	Clark, Ezra, assignor to Seth Clark	Tablets, cast metal	Oct. 26, 1858.
994	Clayton, Charles H	Press stand, copying	Mar. 23, 1858.
1,009	Conner, James	Types, a font of	June 1, 1858.
1,020	Conner, James	Types	July 6, 1858.
1,021	Conner, James	Types, printers'	July 6, 1858.
1,022	Conner, James	Types, printers'	July 6, 1858.
1,064	Conner, James	Types, script	Nov. 16, 1858.
1,059	Cridge, E. J	Stove	Nov. 2, 1858.
987	Delany, E. J., and John Martin, assignors to Cresson, Stewart & Peterson.	Stove plates	Feb. 16, 1858.
1,010	Delany, E. J., and J. Martin, assignors to W. P. Cresson, D. Stewart, and R. Peterson.	Stove, cooks'	June 1, 1858.
1,026	Delany, E. J., assignor to H. E. Marsh and J. Johnson	Stove, cooks'	July 13, 1858.
1,034	Erwin, Cornelius B	Door-lock plates	Aug. 10, 1858.
1,035	Erwin, Cornelius B	Door-lock plates	Aug. 10, 1858.
1,488	Eshleman, J. Albert	Cravats	Nov. 12, 1861.
1,070	Forbes, William H	Coffins, metallic	Dec. 7, 1858.
1,074	French, William B	Book marks	Dec. 14, 1858.
1,003	Gibbs, S. W	Stove, cooks'	May 11, 1858.
1,004	Gibbs, S. W., assignor to Rathbone & Co	Stove, parlor	May 11, 1858.
1,005	Gibbs, S. W., assignor to Rathbone & Co	Stove plates	June 22, 1858.
1,069	Gomez, Edwin	Vehicles, fifth wheel for	Mar. 9, 1858.
1,466	Greene, William A	Stove, laundry	Aug. 13, 1861.
1,031	Ham, R., assignor to Smith, Sheldon & Co	Stove, cooks'	Aug. 3, 1858.
978	Hathaway, David, assignor to Fuller, Warren & Morrison	Stove, (Viola)	Jan. 12, 1858.

List of persons whose patents for designs have expired during the year 1865—Continued.

No.	Patentee.	Design.	Date.
976	Hathaway, David, assignor to Fuller, Warren & Morrison	Stove, (Leader)	Jan. 12, 1858.
977	Hathaway, David, assignor to Fuller, Warren & Morrison	Stove, (Consul)	Jan. 12, 1858.
979	Hathaway, David, assignor to Fuller, Warren, & Morrison	Stove, (Pride of the West)	Jan. 12, 1858.
988	Hebbard, Henry, and John Polhamus	Spoons &c., handles of	Feb. 16, 1858.
1,016	Horton, J., assignor to D. Stewart and J. Peterson	Stove	June 29, 1858.
993	Ives, James	Carriage-hubs and bands	Mar. 9, 1858.
997	Jackson, J. L., (No. 1)	Screens for steam pipes, &c	Apr. 13, 1858.
998	Jackson, J. L., (No. 2)	Screens for steam pipes, &c	Apr. 13, 1858.
1,045	Jackson, James L	Screens	Aug. 31, 1858.
1,000	Jerome, Samuel B	Clock-case fronts	May 4, 1858.
1,049	Kern, Francis	Bottles, nursery	Sept. 14, 1858.
995	Koch, John P	Bedsteads, iron legs and posts of	Mar. 23, 1858.
991	Leonard, Allen, assignor to Rogers Manufacturing Co	Pots, tea and coffee	Feb. 23, 1858.
1,507	Lyons, Thomas, assignor to Russell & Erwin Manufacturing Co.	Horse spur	Dec. 24, 1861.
1,486	Morrisett, James, jr., assignor to Jacob L. Dodge	Hats	Oct. 29, 1861.
1,443	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern, carpet	July 16, 1861.
1,444	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern, carpet	July 16, 1861.
1,445	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern, carpet	July 16, 1861.
1,446	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern, carpet	July 16, 1861.
1,447	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern, carpet	July 16, 1861.
1,448	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern, carpet	July 16, 1861.
1,449	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern, carpet	July 16, 1661.
1,450	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern, carpet	July 16, 1861.
1,451	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern, carpet	July 16, 1861.
1,452	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern carpet	July 16, 1861.
1,459	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern, carpet	Aug. 13, 1861.
1,460	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern, carpet	Aug. 13, 1861.
1,461	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern, carpet	Aug. 13, 1861.
1,462	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern, carpet	Aug. 13, 1861.
1,463	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern, carpet	Aug. 13, 1861.
1,464	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern, carpet	Aug. 13, 1861.
1,465	Ney, Elemir J., assignor to Lowell Manufacturing Co	Pattern, carpet	Aug. 13, 1861.
980	Palmer, Peter A	Stove	Jan. 12, 1858.
996	Pittock, G. W., G. G. Richmond, and C. Phelps, assignors to themselves and J. Lown.	Stove, cooks'	Apr. 6, 1858.
989	Pratt, S. F	Sewing machines, tables for	Feb. 16, 1858.
1,057	Randall, A. C	Sockets	Oct. 19, 1858.
1,017	Read, J. A., assignor to D. Steward and J. Peterson	Stove	June 29, 1858.
981	Read, Henry G, assignor to himself and C. E. Burton	Tea service	Jan. 12, 1858.
1,062	Reynolds, Edward, assignor to Thomas W. Brown	Stands, hat and cane	Nov. 16, 1858.
1,048	Richardson, Nathaniel P	Stove	Sept. 7, 1858.
1,036	Russell, Henry E	Door-lock plates	Aug. 10, 1858.
1,468	Shaw, Charles A	Work-holder	Aug. 13, 1861.
1,476	Sailor, S. H., assignor to Smith, Francis & Wells	Stove, egg-cylinder	Oct. 8, 1861.

1,477	Sailor, S. H., assignor to Smith, Francis & Wells	Stove, gas-burning cylinder	Oct. 8, 1861.
1,456	Scypes, Daniel M., assignor to Smith, Francis & Wells	Stove, cooks'	July 23, 1861.
1,457	Scypes, Daniel M., assignor to Smith, Francis & Wells	Range, summer	July 23, 1861.
1,011	Seavey, G. T	Stove, &c., ornament in bas relief	June 1, 1858.
975	Shepard, Charles J	Stove	Jan. 5, 1858.
974	Smith, G., H. Brown, and S. H. Sailor, assignors to Alexander Small and E. Y. Smyser.	Stove, cooks'	Jan. 5, 1858.
1,019	Smith, G., and H. Brown, assignors to Leibrandt, McDowell & Co.	Stove, cook	June 29, 1858.
1,018	Smith, G., and H. Brown, assignors to Leibrandt, McDowell & Co.	Stove, cook	June 29, 1858.
1,072	Smith, G., and H. Brown, assignors to Leibrandt, McDowell & Co.	Stove, parlor	Dec. 14, 1858.
1,029	Smith, G., and H. Brown, assignors to North, Chase & Worth.	Stove	Sept. 21, 1858.
1,028	Smith, George W	Pitcher	July 10, 1858.
1,071	Sprecher, George D	Stove, dining-room	Dec. 7, 1858.
1,041	Steffe, Jacob, James Horton, and John Carrie, assignors to David Steward and R. Peterson.	Stove, (Fancy Egg)	July 17, 1858.
1,042	Steffe, Jacob, James Horton, and John Carrie, assignors to David Steward and R. Peterson.	Stove, (Ironside)	
1,047	Stephens, W. W., assignor to N. P. Richardson & Co	Stove, cooks', oven	Sept. 7, 1858.
1,050	Tabb, Philip	Bedstead, cast-iron	Aug. 14, 1858.
1,061	Thomas, Lyman L., assignor to Dighton Furnace Co.	Stove	Nov. 9, 1858.
1,489	Thompson, Henry G., assignor to Hartford Carpet Co.	Pattern, carpet	Nov. 19, 1861.
1,490	Thompson, Henry G., assignor to Hartford Carpet Co.	Pattern, carpet	Nov. 19, 1861.
1,491	Thompson, Henry G., assignor to Hartford Carpet Co.	Pattern, carpet	Nov. 19, 1861.
1,492	Thompson, Henry G., assignor to Hartford Carpet Co.	Pattern, carpet	Nov. 19, 1861.
1,493	Thompson, Henry G., assignor to Hartford Carpet Co.	Pattern, carpet	Nov. 19, 1861.
1,494	Thompson, Henry G., assignor to Hartford Carpet Co.	Pattern, carpet	Nov. 19, 1861.
1,495	Thompson, Henry G., assignor to Hartford Carpet Co.	Pattern, carpet	Nov. 19, 1861.
1,496	Thompson, Henry G., assignor to Hartford Carpet Co.	Pattern, carpet	Nov. 19, 1861.
1,497	Thompson, Henry G., assignor to Hartford Carpet Co.	Pattern, carpet	Nov. 19, 1861.
1,498	Thompson, Henry G., assignor to Hartford Carpet Co.	Pattern, carpet	Nov. 19, 1861.
1,499	Thompson, Henry G., assignor to Hartford Carpet Co.	Pattern, carpet	Nov. 19, 1861.
1,500	Thompson, Henry G., assignor to Hartford Carpet Co.	Pattern, carpet	Nov. 19, 1861.
1,501	Thompson, Henry G., assignor to Hartford Carpet Co.	Pattern, carpet	Nov. 19, 1861.
1,502	Thompson, Henry G., assignor to Hartford Carpet Co.	Pattern, carpet	Nov. 19, 1861.
1,503	Thompson, Henry G., assignor to Hartford Carpet Co.	Pattern, carpet	Nov. 19, 1861.
990	Tuttle, E. A., and Thomas Barry	Compass stand	Feb. 23, 1858.
1,038	Vedder, N. S.	Stove, cooking	Aug. 10, 1858.
1,039	Vedder, N. S.	Stove, parlor	Aug. 10, 1858.
1,040	Vedder, N. S.	Stove, parlor	Aug. 10, 1858.
973	Vedder, N. S., assignor to G. W. Eddy	Stove	Jan. 5, 1858.
1,027	Vedder, N. S., assignor to G. W. Eddy	Stove	Jan. 13, 1858.
1,055	Vedder, N. S., assignor to G. W. Eddy	Stove, cooks'	Oct. 5, 1858.
892	Vedder, N. S., and Ezra Ripley, assignors to L. Potter & Co.	Stove	Jan. 22, 1858.
992	Vedder, N. S., and Ezra Ripley, assignors to Lewis Potter	Stove plates	Feb. 23, 1858.
1,037	Vedder, N. S., and Ezra Ripley, assignors to N. S. Vedder	Stove box	Aug. 10, 1858.
984	Vedder, N, S., and W. S. Sanderson, assignors to George Warren.	Stove	Jan. 12, 1858.

List of persons whose patents for designs have expired during the year 1865—Continued.

No.	Patentee.	Design.	Date.
983	Vedder, N. S. and W. S. Sanderson, assignors to L. Potter & Co.	Stove	Jan. 12, 1858.
1,065	Vose, Samuel D.	Stove plates	Nov. 23, 1858.
1,066	Vose, Samuel D.	Stove plates	Nov. 23, 1858.
1,067	Vose, Samuel D.	Stove plates	Nov. 23, 1858.
1,068	Vose, Samuel D.	Stove plates	Nov. 23, 1858.
1,007	Waterman, N.	Stand, towel	May 25, 1858.
1,032	Waterman, N.	Stand, towel	Aug. 3, 1858.
1,043	Waterman, N.	Roll pans	Aug. 17, 1858.
1,046	Waterman, N.	Pans, bread	Aug. 31, 1858.
999	Wheeler, R., and S. A. Bailey	Stoves, cooks'	May 4, 1858.
1,012	Wilcox, J.	Sewing-machine stand	June 1, 1858.
1,478	Winger, W. P.	School desk	Oct. 8, 1861.
1,002	Wood, T. H., J. E. Roberts, and H. S. Hubbell	Stove, cooks'	May 11, 1858.

No.	Patentee.	Residence.	Invention or discovery.	Date.
2,134	Abbe, H. H	Chatham, Conn	Bell, door (Reissue)	Dec. 26, 1865.
48,637	Abbe, Horatio H.	Chatham, Coun	Bell or gong, door	July 11, 1865.
	Abbe, Horatio H., and Wm. H. Nichols. (*See* Nichols & Abbe.)			
51,675	Abbott, James R	Midway, Ind	Level, square, compass, and plumb staff, combined	Dec. 26, 1865.
46,174	Abbott, Samuel K., assignor to Joel D. Champion	Salem, N. H	Lasts, shoe	Jan. 31, 1865.
	Abbott, Thomas H. (*See* Taber, Wing H., assignor.)			
	Abbott, Warren N. (*See* Bowker, Milton, assignor.)			
46,603	Abbott, Warren N., assignor to self and Dwight B. Rich	Boston, Mass	Pipe couplings	Feb. 28, 1865.
50,783	Absterdam, John	New York, N. Y	Projectiles, banding and covering	Nov. 7, 1865.
49,842	Achard, F. F. A	France	Electro-magnetic regulators	Sept. 5, 1865.
45,805	Adair, James	Pittsburg, Pa	Lamps	Jan. 10, 1865.
48,638	Adams, Charles S	Hillsdale, Mich	Foot rest	July 11, 1865.
46,201	Adams, Edgar B., R. P. Trimble, and H. N. Adams	Salem, Ohio	Engines, rotary	Feb. 7, 1865.
50,784	Adams, Heury B	Brooklyn, N. Y	Building with wood, siding and covering	Nov. 7, 1865.
49,489	Adams, Henry J	Leavenworth, Kansas	Window cords, mode of attaching sash to	Aug. 22, 1865.
50,998	Adams, Henry W	Irvington, N. J	Tanning	Nov. 21, 1865.
2,028	Adams, Henry W., and W. S. Worthington	New York, N. Y. Newtown, N. Y	Amalgamating and collecting gold and silver (Reissue)	July 18, 1865.
	Adams, Jewett & Co. (*See* Burridge, W. H., assignor.)			
47,608	Adams, J. N	Birmingham, Iowa	Planter, corn	May 9, 1865.
51,408	Adams, J. P	Whitney's Point, N. Y	Butter workers	Dec. 12, 1865.
49,061	Adams, John	Kokomo, Ind	Shoe fastenings	Aug. 1, 1865.
49,946	Adams, John, assignor to self, A. B. Walker, A. J. Hobbs, and Wm. Russell.	Kokomo, Ind	Boots and shoes, lining for	Sept. 12, 1865.
	Adams, John B., and Daniel L. Gold. (*See* Gold & Adams.)			
45,806	Adams, John S	Taunton, Mass	Grenades, hand, igniting	Jan. 10, 1865.
48,010	Adams, John S., assignor to self and Wm. C. Dodge	Taunton, Mass	Cartridges around bullets, implement for compressing	May 30, 1865.
49,490	Adams, Joseph	Janesville, Wis	Washing machine	Aug. 22, 1865.
49,690	Adams, Nathan	Altoona, Pa	Spikes, machine for drawing	Sept. 5, 1865.
46,765	Adams, Wm. P., and Heury A	Norwich, Conn	Stoves, radiator for	Mar. 14, 1865.
51,774	Adams, Robert A., assignor to self and Edwin Lee Brown	Chicago, Ill	Graining wood, apparatus for. (Antedated December 13, 1865)	Dec. 26, 1865.
46,061	Adamson, William	Philadelphia, Pa	Leather, mode of economizing the manufacture of articles of. (Antedated December 29, 1864.)	Jan. 31, 1865.
46,317	Adamson, William	Philadelphia, Pa	Disinfecting noxious vapors, process for	Feb. 14, 1865.
46,318	Adamson, William	Philadelphia, Pa	Offal, method of treating	Feb. 14, 1865.
47,264	Adamson, William	Philadelphia, Pa	Agitating and kneading substances, apparatus for	Apr. 18, 1865.
2,114	Adamson, Wm., assignor to J. P., E. P., and D. Baugh	Philadelphia, Pa	Offal, method of treating (Reissue)	Nov. 28, 1865.
46,196	Aerts, Jean F. A., and Paul F., assignors to Jean F. A. Aerts	Belgium	Lubricator	Jan. 31, 1865.
51,276	Aerts, Jean F. A	Belgium	Lubricating apparatus. (Patented in Belgium Sept. 5, 1864)	Nov. 28, 1865.
51,676	Agnew, John	Bath, Pa	Boring fence posts, machines for	Dec. 16, 1865.
	Agricultural Iron Works. (*See* Neer, Charles, assignor.)			
45,902	Ahl, David	Newville, Pa	Barrels, oil, from leaking, method of preventing	Jan. 17, 1865.
46,749	Aiken, John, assignor to Erastus Wilkins	Warner, N. H.	Churns	Mar. 7, 1865.
	Akins, W. H., and J. D. Felthousou	Dryden, N. Y Michigan City, Ind	Sewing machines (Extension)	July 29, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
1,930	Akins, W. H., and J. D. Felthouson, assignors through mesne assignments to R. G. Fairbanks.	New York, N. Y.	Sewing machines (Reissue.)	Apr. 11, 1865.
50,320	Albertson, Jas. M.	New London, Conn	Valves, cut-off. (Antedated September 27, 1865)	Oct. 10, 1865.
48,222	Albright, Daniel K., and L. H. De Lange	Philadelphia, Pa. / Bordentown, N. J.	Hat	June 13, 1865.
2,177	Albright, Daniel K., and L. H. De Lange	Philadelphia, Pa. / Bordentown, N. J.	Hat (Design)	Oct. 10, 1865.
2,178	Albright, Daniel K., and L. H. De Lange	Philadelphia, Pa. / Bordentown, N. J.	Hat (Design)	Oct. 10, 1865.
50,999	Albright, Daniel K., and L. H. De Lange	Philadelphia, Pa. / Bordentown, N. J.	Hat, device for ventilating	Nov. 21, 1865.
46,435	Albright, Hubley	Lewisburg, Pa.	Rakes, horse	Feb. 21, 1865.
47,781	Alden, Albert	New York, N. Y.	Brush	May 23, 1865.
2,083	Alden, Augustus E	Providence, R. I.	Photographic card (Design)	June 13, 1865.
	Alden, Henry A. (*See* Moith, A. Theodore, assignor.)			
46,616	Alden, Ruel	East Toledo, Ohio	Trees from injury while ploughing, protecting	Mar. 7, 1865.
46,202	Aldrich, David C.	Anamosa, Iowa	Churns	Feb. 7, 1865.
47,911	Aldrich, Hosea P., assignor to self and George Jenks	Spencer, Mass.	Sewing machines, waxed-thread	May 30, 1865.
47,912	Aldrich, Hosea P., assignor to self and George Jenks	Spencer, Mass.	Sewing machines, thread-waxing device for	May 30, 1865.
49,484	Alexander, Abram	Pittsburg, Pa.	Bolt machine	Aug. 15, 1865.
50,671	Alexander, Benjamin F.	Philadelphia, Pa.	Beefsteak, pressing, paring apples, and sharpening knives, machine for.	Oct. 31, 1865.
	Alexander, John H., and David R. (*See* Gross, John, assignor.)			
51,000	Alexander, Levi A	Colerain, Mass.	Washing dishes, machine for	Nov. 21, 1865.
50,785	Alexander, Thomas J.	Westerville, Ohio	Wagons, spring seat for	Nov. 7, 1865.
	Alexander, Thos. K. (*See* Gross, John, assignor.)			
	Alexander, Wm., and W. J. Van Horn. (*See* Van Horn and Alexander.)			
	Alexander, W. H., & Co. (*See* Jay, James M., assignor.)			
	Alexander, W. H., & Co. (*See* Jay, James M., assignor.)			
47,265	Allamby, Geo. T., and John G. Bugbee	Bangor, Maine	Crutches	Apr. 18, 1865.
51,677	Allamby, Geo. T., and John G. Bugbee	Bangor, Maine	Crutches	Dec. 26, 1865.
	Allen, Chas. T. (*See* Trimble, Charles B., assignor.)			
48,883	Allen, D. D.	South Adams, Mass.	Valves	July 25, 1865.
46,617	Allen, Ethan	Worcester, Mass.	Cartridge retractor for breech-loading fire-arms	Mar. 7, 1865.
47,688	Allen, Ethan	Worcester, Mass.	Cartridges, metallic	May 16, 1865.
48,249	Allen, Ethan	Worcester, Mass.	Gun barrels, constructing	June 20, 1865.
49,491	Allen, Ethan	Worcester, Mass.	Fire-arms, breech-loading	Aug. 22, 1865.
1,948	Allen, Ethan	Worcester, Mass.	Cartridge cases, machine for making (Reissue)	May 9, 1865.
1,949	Allen, Ethan	Worcester, Mass.	Cartridge cases, machine for making (Division 2 of reissue)	May 9, 1865.
46,766	Allen, Hiram, jr.	Wallingford, Conn.	Churns	Mar. 14, 1865.
48,781	Allen, Jason A., and Alanson	Oakham, Mass.	Water wheels	July 18, 1865.
49,209	Allen, J. M.	Marion, Mass.	Paper, manufacture of	Aug. 8, 1865.
50,087	Allen, John	Washington, D. C.	Lamps, keeping oil cool in	Sept. 26, 1865.
	Allen, John, and Thomas Lamb. (*See* Lamb & Allen.)			

46,980	Allen, John P	Richmond, Ind	Desk and seat, school	Mar. 28, 1865.
48,144	Allen, Joshua G	Philadelphia, Pa	Stove, air-tight	June 13, 1865.
46,319	Allen, Oliver	San Francisco, Cal	Butter mould	Feb. 14, 1865.
	Allen, Richard L. (*See* Dutton, Rufus, assignor.) Reissue.			
48,782	Allen, Stephen M	Woburn, Mass	Hemp, flax, jute, grass, &c., method of treating	July 18, 1865.
	Allen, T., and S. Van Hennick. (*See* Van Hennick & Allen.)			
1,844	Allen, Wm. H., assignor to self and Otis Warren	Fryeburg, Maine	Leaching tan bark and preparing extracts, apparatus for. (Reissue.)	Jan. 3, 1865.
1,934	Allender, John, assignor, through mesne assignments, to S. A. Bailey and S. S. and B. M. Cook.	Woonsocket, R. I	Wringing machine (Reissue)	Apr. 18, 1865.
51,409	Allerton, J. C., and A. B	Aztalan, Wis	Stove pipe damper	Dec. 12, 1865.
49,959	Allin, E. S	Springfield, Mass	Fire-arms, breech-loading	Sept. 19, 1865.
48,783	Allstott, Parker H	Jeffersonville, Ind	Cultivator	July 18, 1865.
47,374	Allyn, Erastus P	North Canaan, Conn	Tables, extension, slide for	Apr. 25, 1865.
48,250	Allyn, T. F	Canandaigua, N. Y	Car springs. (Antedated March 28, 1865)	June 20, 1865.
47,375	Almy, Ira	Farmer, N. Y	Coffin handles	Apr. 25, 1865.
	Alvord, E. B., *et al.* (*See* Swan, Thomas, assignor.)			
	Alvord, J. D. (*See* Mallerd, Wm., assignor.)			
50,088	Alvord, John J	Tecumseh, Mich	Brick presses	Sept. 26, 1865.
46,867	Ambler, Augustine J	Chicago, Ill	Friction wheels and oil chamber. (Antedated March 10, 1865.)	Mar. 21, 1865.
51,678	Ambler, Stephen F	Brooklyn, N. Y	Ore separator	Dec. 26, 1865.
47,782	Ambrose, George	New York, N. Y	Hoisting apparatus	May 23, 1865.
46,045	Ambrose, Joshua E., assignor to Sarah T. Ambrose	Middletown, N. Y	Lamp, coal-oil, and gas stove	Jan. 24, 1865.
1,900	Ambrose, Joshua E., assignor to Sarah T. Ambrose	Middletown, N. Y	Lamps (Reissue)	Mar. 14, 1865.
45,807	Ament, W. D	Muscatine, Iowa	Cultivators	Jan. 10, 1865.
48,884	Ament, W. D	Muscatine, Iowa	Cultivators	July 25, 1865.
	American Automatic Stop-Motion Company. (*See* Jackman, John, jr., assignor.)			
	American Automatic Stop-Motion Company. (*See* Jackman, John, jr., assignor.)			
	American Automatic Stop-Motion Company. (*See* Jackman, John, jr., assignor.)			
	American Basket Company. (*See* Jeffery, Edwin A., assignor.)			
	American Basket Company. (*See* Jeffery, Edwin A., assignor.)			
	American Button-Hole Sewing Machine Company. (*See* Rehfuss, George, assignor.)			
	American Car Wheel and Railway Chair Manufacturing Company. (*See* Everett, Alexander H., assignor.)			
	American Flask and Cap Company. (*See* Luther, F. C., assig'r.)			
	American Gas Machine Company. (*See* Simonds, Warren A., assignor.)			
	American Lead Pencil Company. (*See* Schedler, Joseph, assig'r.)			
	American Water-Proof Cloth Company. (*See* Crossly, Thos., assignor.)			
	American Water-Proof Cloth Company. (*See* Crossly, Thos., ass'r.)			
	American Water-Proof Cloth Company. (*See* Crossly, Thos., assignor.)			
	American Water-Proof Cloth Company. (*See* Crossly, Thos., assignor.)			
	American Water-Proof Cloth Company. (*See* Greene, J. F., assignor.) Reissue.			
1,882	Ames, Horatio	Falls Village, Conn	Cannons, wrought, manufacture of (Reissue)	Feb. 28, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,177	Ames, Horatio	Falls Village, Conn	Ordnance, manufacture of	Apr. 11, 1865.
2,179	Ames, John	Lansingburg, N. Y.	Trade-mark (Design)	Oct. 10, 1865.
46,203	Ames, John H.	Baltimore, Md	Boilers, steam	Feb. 7, 1865.
47,150	Ames, M. C., assignor to Landers & Smith Manufacturing Co.	Hartford, Conn	Window cord pulleys	Apr. 4, 1865.
48,502	Ames, S. F.	Stanford, Ky	Motion, converting rotary into reciprocating	July 4, 1865.
51,282	Ames, S. F.	Stanford, Ky	Saw-mills	Dec. 5, 1865.
47,079	Amidon, Charles H	Greenfield, Mass.	Wringing machine	Apr. 4, 1865.
50,214	Amidon, Charles H	Greenfield, Mass.	Bit stocks	Oct. 3, 1865.
2,057	Amory, Jonathan	West Roxbury, Mass.	Furnaces, steam-boiler (Reissue)	Aug. 29, 1865.
2,058	Amory, Jonathan	West Roxbury, Mass.	Furnaces, steam-boiler (Division 2 of reissue)	Aug. 29, 1865.
48,145	Amos, James B.	Lower Chanceford, Pa	Drills, grain	June 13, 1865.
47,507	Anderson, Charles T.	Clarksburg, Md.	Churns	May 2, 1865.
47,689	Anderson, George	Salem, Oregon	Boxes, sheet-metal, making	May 16, 1865.
47,595	Anderson, Philander, assignor to self and P. K. Bronson	East Avon, N. Y.	Water elevators, chains for	May 2, 1865.
2,089	Anderson, William T., assignor to self and Hezekiah S. Archer	Brooklyn, N. Y.	Books, embossed covers for (Reissue)	Oct. 17, 1865.
50,786	Andrew, Charles	Providence, R. I.	Lubricating journals, mode of	Nov. 7, 1865.
46,204	Andrew, Peter	Cincinnati, Ohio	Lard, tallow, and grease from the refuse of rendering tanks, machine for separating.	Feb. 7, 1865.
51,679	Andrews, Albert F. and John H.	Avon, Conn	Fuze, safety	Dec. 26, 1865.
45,963	Andrews, Edward	Palo Alto, Pa.	Bolt, shutter	Jan. 24, 1865.
51,533	Andrews, Edward	Pottsville, Pa.	Valves, stop	Dec. 19, 1865.
51,126	Andrews, Emanuel	Williamsport, Pa	Saw mills	Nov. 28, 1865.
49,600	Andrews, Geo. W., and John P. Burnham	Chicago, Ill.	Carpet fastening	Aug. 29, 1865.
49,210	Andrews, H. P	Cleveland, Ohio	Pencil sharpener	Aug. 8, 1865.
2,107	Andrews, John C	Woodstock, Maine	Soldiers' memorial (Design)	July 4, 1865.
48,760	Andrews, Joseph K., assignor to self and J. C. Tilton	Antrim, Ohio	Lamps	July 11, 1865.
51,534	Andrews, Josias J.	Clyde, Ill.	Warmer, foot	Dec. 19, 1865.
50,215	Andrews, R. W.	Staffordville, Conn.	Looms	Oct. 3, 1865.
48,864	Andrews, T. Cecil, assignor to self and Peter Gordon	Leverington, Pa.	Boots and shoes, machine for cleaning	July 18, 1865.
	Andrews, Wm. H., *et al.* (*See* Bristol, C. B., assignor.)			
47,074	Andries, Edouard	Belgium	Filters. (Patented in Belgium February 20, 1864)	Mar. 28, 1865.
46,062	Angenard, Louis Paul	New York, N. Y.	Glass, looking, process for making	Jan. 31, 1865.
46,767	Angenard, Louis Paul	New York, N. Y.	Glass with platinum, method of coating	Mar. 14, 1865.
1,883	Angenard, Louis Paul	New York, N. Y.	Mirrors, or looking-glasses, method of making (Reissue)	Feb. 28, 1865.
48,784	Ansell, A. D.	Hartford, Conn.	Belt clasp	July 18, 1865.
48,885	Anthony, Sherman E.	Stillwater, N. Y.	Shingle machine	July 25, 1865.
2,234	Anton, Gustavus, assignor to self, J. Hirner, and F. Brurein	Philadelphia, Pa.	Fan (Design)	Dec. 26, 1865.
46,063	Archer, Ellis S.	New York, N. Y.	Burners, Argand, manufacture of	Jan. 31, 1865.
	Archer, Ellis S. (*See* Hill, George B., assignor.)			
	Archer, E. P., and Geo. Pancoast. (*See* Deaves, Charles, assignor.)			
	Archer, Hezekiah S. (*See* Anderson, Wm. T., assignor.) Reissue.			
1,989	Archer, William, assignor to self and William P. Downer	New York, N. Y.	Distilling hydrocarbon oils (Reissue)	June 13, 1865.
46,706	Archer, William, and Clinton Rice	New York, N. Y.	White lead, manufacture of	Mar. 7, 1865.
47,078	Arick, Clifford	St. Clairsville, Ohio	Projectiles for rifled ordnance, packing	Mar. 28, 1865.
	Arick, C., *et al.* (*See* Reinhold, C. G., assignor.)			

47,376	Arkell, James, and Benjamin and Adam Smith	Canajoharie, N. Y	Paper bags	Apr. 25, 1865.
48,036	Arkell, James, and Benjamin Smith	Canajoharie, N. Y	Paper bags	June 6, 1865.
50,198	Armington, William W., assignor to George E. Mitchell	Lowell, Mass	Ice crusher	Sept. 26, 1865.
50,199	Armington, William W., assignor to George E. Mitchell	Lowell, Mass	Fruit masher and lemon squeezer	Sept. 26, 1865.
	Armington, Wm. W., and Dan. Welch. (*See* Welch & Armington.)			
	Armstrong, C. J. and B. F. (*See* Hickel, Sanford A., assignor.)			
48,353	Armstrong, H. N	Erie, Pa	Nuts, stop-washer for	June 27, 1865.
	Armstrong, James, and Peter Lugenbell. (*See* Lugenbell & Armstrong.)			
51,680	Armstrong, James	Elmira, Ill	Cultivators	Dec. 26, 1865.
51,535	Arndt, Theophilus	Mount Joy, Pa	Car coupling	Dec. 19, 1865.
50,672	Arneman, Alfred	Guttenberg, Iowa	Sleighs, cutter	Oct. 31, 1865.
46,842	Arnold, Alfred, assignor to self, H. B. Stanton, and D. C. Eaton	North Englewood, N. J	Railroad rails, screws for fastening	Mar. 14, 1865.
50,321	Arnold, Alonzo C	Norwalk, Conn	Lock, window-sash	Oct. 10, 1865.
50,436	Arnold, Alonzo C	Norwalk, Conn	Hoes, weeding, adjustable	Oct. 17, 1865.
50,546	Arnold, Alonzo C	Norwalk, Conn	Fastenings, window-blind	Oct. 24, 1865.
47,178	Arnold, Daniel R	Haddam, Conn	Vessels' sails, lazy-jack for	Apr. 11, 1865.
50,888	Arnold, Francis	Haddam Neck, Conn	Vegetable washer	Nov. 14, 1865.
47,508	Arnold, James G	Worcester, Mass	Envelope, letter	May 2, 1865.
47,080	Arnold, L. L	New York, N. Y	Cigarettes	Apr. 4, 1865.
	Arnold, L. L., and F. X. Hazman. (*See* Hazman & Arnold.)			
2,079	Arnold, Stephen D., assignor to P. and F. Corbin	New Britain, Conn	Coffin handle (Design)	June 6, 1865.
49,358	Arnold, Thomas	New York, N. Y	Gas for heating and illuminating buildings and for other purposes, manufacture of.	Aug. 15, 1865.
46,519	Arnold, Varnum G., assignor to self and Charles G. Bird	Boston, Mass	Ticket holder	Feb. 21, 1865.
47,179	Arrouquier, William	Worcester, Mass	Buildings, staging for	Apr. 11, 1865.
48,886	Arthur, William	Brooklyn, N. Y	Air, apparatus for compressing	July 25, 1865.
	Asay, A. Merritt. (*See* Riedel, G. Adolph, assignor.)			
50,673	Aschenbach, Henry	Washington, D. C	Buckle	Oct. 31, 1865.
47,266	Ascherfeld, Theodore	Elkton, Md	Time reporters. (Antedated April 17, 1865)	Apr. 18, 1865.
49,960	Ash, James	Sterling, Ill	Water conductors, cut-off for	Sept. 19, 1865.
47,783	Ash, Joseph H	Brooklyn, N. Y	Boiler, kitchen-range	May 23, 1865.
45,685	Ashcroft, E. H	Lynn, Mass	Steam-pressure gauges	Jan. 3, 1865.
46,981	Ashcroft, E. H	Lynn, Mass	Drills, ratchet	Mar. 28, 1865.
	Ashcroft, E. H., *et al.* (*See* Burrill, J., assignor.) Reissue.			
51,382	Ashdown, E., and G. W. Galpin, assignors to selves, and S. B. and P. Pierce.	Homer, N. Y	Wells, device for sinking. (Antedated October 31, 1865)	Dec. 5, 1865.
49,062	Ashley, Frederick	New York, N. Y	Boiler, egg	Aug. 1, 1865.
50,674	Ashley, Kate E	Williamsburg, N. Y	Jars, preserve, stand for	Oct. 31, 1865.
	Ashton, C. A., and J. H. La Boyteaux. (*See* La Boyteaux & Ashton.)			
46,982	Asmus, George	Houghton, Mich	Writing tablet	Mar. 28, 1865.
48,354	Asmus, George	Houghton, Mich	Lamp chimneys, device for raising	June 27, 1865.
50,216	Asmus, George	Portage, Mich	Stove dampers	Oct. 3, 1865.
50,764	Aspinall, William, assignor to self and James Ledger	Manayunk, Pa	Looms for lappet weaving	Oct. 31, 1865.
50,889	Aspinwall, L. Augustus	Watervliet, N. Y	Digger, potato	Nov. 14, 1865.
50,890	Aspinwall, L. Augustus	Watervliet, N. Y	Planter, potato	Nov. 14, 1865.
47,081	Atkins, Thomas	Cincinnati, Ohio	Organs, cabinet, or harmoniums	Apr. 4, 1865.
	Atkinson, Hoffman. (*See* Wilson, Albert A., assignor.)			
	Atkinson, Hoffman. (*See* Wilson, Albert A., assignor.)			
47,267	Atterbury, J. S. and T. B	Pittsburg, Pa	Lanterns	Apr. 18, 1865.
47,268	Atterbury, J. S. and T. B	Pittsburg, Pa	Lanterns, globe	Apr. 18, 1865.
50,437	Atterbury, J. S. and T. B	Pittsburg, Pa	Glasses, drinking, manufacture of	Oct. 17, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
46,768	Atwater, John B	Chicago, Ill	Ploughs	Mar. 14, 1865.
48,887	Atwater, John B	Chicago, Ill	Amalgamator	July 25, 1865.
48,888	Atwater, John B	Chicago, Ill	Stand, work, ladies'	July 25, 1865.
49,063	Atwater, John B	Chicago, Ill	Pumps, steam	Aug. 1, 1865.
	Atwater, S., and Hiram Dailey. (*See* Johnson, Chas. W., ass'or.)			
51,536	Atwood, Caroll	Lebanon, Ill	Ploughs, gang	Dec. 19, 1865.
49,359	Atwood, James E	Lynn, Mass.	Washing roller	Aug. 15, 1865.
49,360	Atwood, James E	Lynn, Mass.	Washing machine	Aug. 15, 1865.
49,361	Atwood, James E	Lynn, Mass.	Wringing machine	Aug. 15, 1865.
	Atwood, Jas. E., and Wm. B. Blaisdell. (*See* Blaisdell & Atwood.)			
47,609	Atwood, Leonard	Norwich, Conn	Oil-boring apparatus	May 9, 1865.
47,913	Atwood, Lewis J	Waterbury, Conn	Lamps, shadeholder for	May 30, 1865.
49,064	Atwood, Lewis J	Waterbury, Conn	Lamps	Aug. 1, 1865.
46,618	Atwood, William		Metals, apparatus for oxidizing	Mar. 7, 1865.
47,914	Auer, Albert B	Babcock's Grove, Ill.	Boilers, compound for removing scale from	May 30, 1865.
	Aultman, C., & Co. (*See* Fisher, Henry, assignor.)			
	Aultman, C., & Co. (*See* Fisher, Henry, assignor.)			
	Aurnhammer, Frank, and Conrad Hagen. (*See* Hagen & Aurnhammer.)			
	Aurora Iron Company. (*See* Weimer, Peter L., assignor.)			
51,537	Austin, A. C	San Francisco, Cal	Quartz crushers	Dec. 19, 1865.
48,251	Austin, John J	New York, N. Y	Legs, artificial	June 20, 1865.
46,205	Austin, Stephen J	Freeport, Maine	Presses	Feb. 7, 1865.
46,436	Avens, William, and Frederick Bradley	Brooklyn, N. Y	Engines, rotary	Feb. 21, 1865.
49,492	Avery, Stephen L	Norwich, N. Y	Tethering apparatus	Aug. 22, 1865.
49,211	Axtman, John	East Cambridge, Mass	Inkstands	Aug. 8, 1865.
51,410	Ayer, James B	Malden, Mass	Fastener, lock key	Dec. 12, 1865.
46,619	Ayer, James C	Lowell, Mass	Ores, process for desulphurizing and disintegrating. (Antedated January 24, 1865.)	Mar. 7, 1865.
46,620	Ayer, James C	Lowell, Mass	Ores, process for desulphurizing and disintegrating. (Antedated January 24, 1865.)	Mar. 7, 1865.
46,621	Ayer, James C	Lowell, Mass	Ores, process for disintegrating, desulphurizing, and oxidizing. (Antedated January 24, 1865.)	Mar. 7, 1865.
	Ayling, Henry A. (*See* Connor, John, assignor.)			
48,233	Ayres, S. K., assignor to self and B. A. Wilder	Dalton, Wis	Separator, grain	June 13, 1865.
	Ayres, W. N., and M. Saviers. (*See* Saviers & Ayres.)			
48,146	Babb, Marshall L	Cape Elizabeth, Maine	Caster for furniture	June 13, 1865.
50,547	Babb, Marshall L	Cape Elizabeth, Maine	Rowlock	Oct. 24, 1865.
51,538	Babbett, Avery	Auburn, N. Y	Bolt-securing machine	Dec. 19, 1865.
46,622	Babbit, Samuel	Kokomo, Ind	Boots, gaiter	Mar. 7, 1865.
46,868	Babcock, Hamlin	New York, N. Y	Thread and needle boxes	Mar. 21, 1865.
45,686	Babcock, Henry S., and Stillman H. Jenks	Ionia, Mich	Plaster and seed sower and roller combined	Jan. 3, 1865.
	Babcock, N., and C. B. Cottrell. (*See* Stillman, C. A., assignor.)			
	Babcock, Sylvester P. (*See* Kilbourn, Hiram, assignor.)			
	Bache, Simon & Co. (*See* Keck, Rudolph, assignor.)			

2,125	Bachelder, John	Norwich, Conn	Sewing machines (Reissue)	Dec. 12, 1865.
50,089	Bacon, Frank M	Ripon, Wis	Planters, cotton seed	Sept. 26, 1865.
	Bacon, F. M., and Joseph Fowler. (*See* Fowler & Bacon.)			
	Bacon, F. M., and Joseph Fowler. (*See* Fowler & Bacon.)			
48,477	Bacon, F. W., assignor to the New York Desiccating Company	New York, N. Y	Vegetable washer	June 27, 1865.
C 50,529	Bacon, Jerome, assignor to self and John F. Seiberling	Medina, Wis	Harvester rakes	Oct. 17, 1865.
* 51,127	Bacon, Jerome and Gilbert	Medina, Wis	Broom	Nov. 28, 1865.
	Bacon, Nelson. (*See* Lewis, James, assignor.)			
	Bacon, Steuben T. (*See* Danglish, John, assignor.)			
49,685	Badin, Charles	France	Friction, mode of diminishing	Aug. 29, 1865.
50,438	Badlam, Edward	Ogdensburg, N. Y	Drills, grain, and cultivator combined	Oct. 17, 1865.
	Baechtel, Charles E., and W. M. McDowell. (*See* McDowell & Baechtel.)			
50,548	Bagot, Joseph	New York, N. Y	Gas, apparatus for generating	Oct. 24, 1865.
47,509	Bagley, Charles H	Waltham, Mass	Chairs, sick	May 2, 1865.
49,843	Baildon, Henry C	East Gloucester, Mass	Fluid, writing	Sept. 5, 1865.
47,269	Bailey, Alfred	Amesbury, Mass	Hats, felt, printed, making	Apr. 18, 1865.
2,210	Bailey, Alonzo B	Middle Haddam, Conn	Coffin handle (Design)	Oct. 31, 1865.
	Bailey, A. J., and J. Power. (*See* Power & Bailey.) Reissue.			
47,891	Bailey, Jacob E., assignor to Samuel E. Bailey	New York, N. Y	Curtain fixtures	May 23, 1865.
47,690	Bailey, Jonathan	East Troy, Wis	Hook, snap	May 16, 1865.
48,252	Bailey, Robert	Cleveland, Ohio	Stoves, coal	June 20, 1865.
51,681	Bailey, Robert	Cleveland, Ohio	Stoves, coal	Dec. 26, 1865.
2,087	Bailey, Robert M	Boston, Mass	Skirt border (Design)	June 13, 1865.
	Bailey, S. A., *et al.* (*See* Allender, John, assignor.) Reissue.			
	Bailey, Stephen G., and Russell Wheeler. (*See* Wheeler & Bailey.) Design.			
51,411	Bailey, Thomas Ives	Nashville, Tenn	Clocks, public, illuminating	Dec. 12, 1865.
48,503	Bailey, Truman G	Wassaic, N. Y	Buckle	July 4, 1865.
48,504	Bailey, William	Troy, N. Y	Hydrants	July 4, 1865.
2,084	Bailly, J. A	Philadelphia, Pa	Lincoln, Abraham, statuette of (Design)	June 13, 1865.
49,691	Bainbridge, Charles T	Brooklyn, N. Y	Paper, sheets of, machinery for plating or finishing	Sept. 5, 1865.
51,527	Baines, Hugh	England	Dies for making railroad crossing joints	Dec. 12, 1865.
47,377	Baird, John	New York, N. Y	Engines, steam	Apr. 25, 1865.
48,355	Baker, Christopher D	Wheeling, West Va	Furnace for boiling iron	June 27, 1865.
2,059	Baker, C. L. W	Hartford, Conn	Broom (Reissue)	Aug. 29, 1865.
	Baker, C. W., *et al.* (*See* Deltour, William, assignor.)			
51,539	Baker, D. B	Rollersville, Ohio	Dough roller	Dec. 19, 1865.
49,065	Baker, Elias	Pittsburg, Pa	Well, oil, drills	Aug. 1, 1865.
50,765	Baker, F. M., assignor to Charles Jordan	South Reading, Mass	Stove, cooking	Oct. 31, 1865.
50,322	Baker, George R	Brooklyn, N. Y	Dough, machine for kneading	Oct. 10, 1865.
46,983	Baker, G. W	New York, N. Y	Ores, treating	Mar. 28, 1865.
46,984	Baker, G. W	New York, N. Y	Ores, roasting and desulphurizing	Mar. 28, 1865.
45,956	Baker, Halsey H	New Market, N. J	Fire bank	Jan. 17, 1865.
48,889	Baker, James R	Kendallville, Ind	Window sash, device for operating	July 25, 1865.
46,843	Baker, John G., ass'r, through mesne assignments, to Henry Disston.	Philadelphia, Pa	Saw grinding machine	Mar. 14, 1865.
51,283	Baker, Loring J	East Machias, Maine	Traps, animal	Dec. 5, 1865.
	Baker, Robert B. (*See* Parry, George T., assignor.)			
50,323	Baker, Seth W	Providence, R. I	Paper-making machines, dryer-felts for	Oct. 10, 1865.
48,243	Baker, William	England	White lead, manufacture of	June 13, 1865
	Baker, William E., and William O. Grover. (*See* Grover & Baker.) Extension.			

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
49,212	Balding, A	Flora, Ill	Pumps, force	Aug. 8, 1865.
	Baldwin, A. C., and Charles H. Warren. (*See* Warren & Baldwin.)			
47,378	Baldwin, Cyrus, assignor to self and Stephen W. Baldwin	Manchester, N. H	Table desk	Apr. 25, 1865.
46,320	Baldwin, Cyrus W	Charlestown, Mass	Air engines, hot	Feb. 14, 1865.
48,639	Baldwin, Cyrus W	Boston, Mass	Air engines, hot	July 11, 1865.
	Baldwin, Cyrus W., and Daniel J. Browne. (*See* Brown & Baldwin.)			
47,379	Baldwin, Goldsmith	Bluffton, Ind	Racks, hay	Apr. 25, 1865.
	Baldwin, Henry, jr. (*See* Lovegrove, Thomas J., assignor.)			
	Baldwin, Henry, jr. (*See* Lovegrove, Thomas J., assignor.)			
	Baldwin, Henry, jr. (*See* Lovegrove, Thomas J., assignor.)			
	Baldwin, Henry, jr. (*See* Lovegrove, Thomas J., assignor.)			
	Baldwin, Henry, jr. (*See* Lovegrove, Thomas J., assignor.)			
	Baldwin, Henry, jr. (*See* Lovegrove, Thomas J., assignor.)			
	Baldwin, Henry, jr. (*See* Lovegrove, Thomas J., assignor.)			
	Baldwin, Henry, jr. (*See* Lovegrove, Thomas J., assignor.)			
	Baldwin, N. (*See* Lewis, E. H., assignor.)			
49,692	Baldwin, N. B	Georgetown, Ill	Sawing machines	Sept. 5, 1865.
47,785	Baldwin, Silas D	Chicago, Ill	Cattle, shears for marking	May 23, 1865.
47,784	Ball, Albert	Worcester, Mass	Bullets, machines for lubricating	May 23, 1865.
46,321	Ball, E	North Manchester, Ind	Ploughs	Feb. 14, 1865.
46,985	Ball, Franklin	Cleona, Iowa	Gate	Mar. 28, 1865.
	Ball, Harvey, and William H. Bonnell. (*See* Sangster, James, assignor.)			
49,066	Ball, James, and John P. Ford	Zanesville, Ohio	Paint composition	Aug. 1, 1865.
45,808	Ball, Jonathan	Elmira, N. Y	Cigars, machine for manufacturing	Jan. 10, 1865.
46,986	Ball, Jonathan	Elmira, N. Y	Cigars, mouth-piece for	Mar. 28, 1865.
2,113	Ball, Jonathan	Elmira, N. Y	Cigars, mouth piece for (Reissue)	Nov. 28, 1865.
48,640	Ball, Martin	Canton, Ohio	Railroad switches	July 11, 1865.
45,964	Ball, Phinehas	Worcester, Mass	Water pipe, tapping	Jan. 24, 1865.
50,090	Ball, Phinehas	Worcester, Mass	Pipe joints	Sept. 26, 1865.
46,290	Ball, Thomas C., assignor through mesne assignments to A. G. Washburn.	Springfield, Vt	Mop holders. (Antedated February 14, 1863)	Feb. 7, 1865.
46,322	Ball, Willard N	Laporte, Ind	Ploughs, snow	Feb. 14, 1865.
	Ballance, Joseph L., and Boswell Wakeman. (*See* Wakeman & Ballance.)			
47,270	Ballantine, A. T	New York, N. Y	Feed bags for horses	Apr. 18, 1865.
50,324	Ballantine, A. T	Morristown, N. J	Torpedo for oil wells, &c	Oct. 10, 1865.
51,001	Ballard, William	Brooklyn, N. Y	Teeth, artificial	Nov. 21, 1865.
48,614	Ballon, Francis D., assignor to Alfred B. Ely	Abington, Mass	Boots and shoes	July 4, 1865.
50,297	Ballon, Francis D., assignor to Alfred B. Ely	Abington, Mass	Sewing machines	Oct. 3, 1865.
	Ballon, Samuel B. (*See* McCloskey, John, assignor.)			
46,323	Balsley, John H	Dayton, Ohio	Tobacco, machine for drying	Feb. 14, 1865.
2,010	Balsley, John H	Dayton, Ohio	Ladder, step (Reissue)	June 27, 1865.

47,915	Baltz, Frederick	New York, N. Y	Desk	May 30, 1865.
48,037	Bamford, William, and J. F. Tate, jr	Milwaukee, Wis	Stove	June 6, 1865.
48,505	Banister, George	Hartford, Vt	Hoes, chisels, &c., socket for	July 4, 1865.
46,324	Banister, Isaac	Newark, N. J	Buckles	Feb. 14, 1865.
	Banks Henry C. (*See* Duff, William L., assignor.)			
46,537	Bankson, William	Mount Pleasant, Iowa	Cultivators	Feb. 28, 1865.
51,284	Baragwanath, Henry, and Martin Van Wisker	New York, N. Y	Fire-annihilator	Dec. 5, 1865.
45,687	Barber, Ira, jr	Laporte, Ind.	Cultivators	Jan. 3, 1865.
	Barber, L. L., and E. F. Bradford. (*See* Bradford & Barber.)			
48,147	Barber, Thomas and John	Brooklyn, N. Y	Valve-spindles, stuffing boxes for	June 13, 1865.
51,540	Barker, Loring S	Pittsford, Mich	Corn house for stacking corn	Dec. 19, 1865.
49,693	Barber, Thomas T	Hampton, Conn	Road-making deviee	Sept. 5, 1865.
46,769	Barbour, Nelson H	Auburn, N. Y	Acid, carbonie, engines	Mar. 14, 1865.
49,845	Bardel, John Albert	Freeport, Ill	Cultivators	Sept. 12, 1865.
49,213	Barden, George F	South Adams, Mass	Book covers	Aug. 8, 1865.
50,413	Barden, John S., assignor to New England Butt Company	Providence, R. I	Engines, steam, valve gear for	Oct. 10, 1865.
50,651	Barden, John S., assignor to New England Butt Company	Providence, R. I	Hydraulic engine and meter	Oct 24, 1865.
	Barff, Arthur, and William Sim. (*See* Sim & Barff.)			
	Barker, Benjamin, and Michael J. Fitzpatrick. (*See* Fitzpatrick & Barker.)			
	Barker, H. R., and Albert Hallowell. (*See* Hallowell & Barker.)			
49,214	Barker, James K	Lawrence, Mass	File-cutting machine	Aug. 8, 1865.
49,067	Barker, Orlando, and George E. Blakelee	Huntington, Ohio	Sheep chairs	Aug. 1, 1865.
46,437	Barker, Silas	Hartford, Conn	Lanee, bomb, for killing whales	Feb. 21, 1865.
49,068	Barker, S. G	Dunmore, Pa	Steam generators, safety-valves for	Aug. 1, 1865.
49,822	Barker, William C., assignor to B. Buchanan Yale	Providence, N. Y	Scythes, fastenings for	Sept. 5, 1865.
46,869	Barker, W. P	Grand Rapids, Mich	Grain binders	Mar. 21, 1865.
45,903	Barlow, Daniel L. and John M	Cohoetah, Mich	Harrow and sceder	Jan. 17, 1865.
48,038	Barnard, A. E	Cleveland, Ohio	Pipe-conplings	June 6, 1865.
48,890	Barnard, H. A	Moline, Ill	Separator, grain	July 25, 1865.
46,325	Barnard, John	Alton, Ill	Saws, cireular, on their arbors, mode of adjusting	Feb. 14, 1865.
48,641	Barnard, Milton	Unionville, Pa	Raeks, sheep	July 11, 1865.
51,002	Barnes, Aaron P	Boston, Mass	Spirometers	Nov. 21, 1865.
49,961	Barnes, Charles	Cincinnati, Ohio	Steam gauges	Sept. 19, 1865.
49,362	Barnes, H. R. and M. T	Watkins, N. Y	Well, deep, tubes, sinking	Aug. 15, 1865.
51,541	Barnes, Merrick M	East Hampton, Mass	Sewing machines treadle-motion for	Dec. 19, 1865.
48,356	Barnes, William S	Watertown, N. Y	Neck ties and shirt collars together, clasps for holding	June 27, 1865.
	Barnett, Albert B., *et al.* (*See* Miller, Barnett & Study.)			
50,091	Barnett, Joseph	Dayton, Ohio	Ladder, step	Sept. 26, 1865.
	Barnhart, George, and George F. Hassenpflug. (*See* Hassenpflug and Barnhart.)			
	Barnes. Chas., and John F. Hempe ly. (*See* Hemperly & Barns.)			
49,846	Barnum, E. T	Waterbury, Conn	Buttons	Sept. 12, 1865.
48,891	Barnum, J. W., and Peter M. McNoah	Detroit, Mich	Petroleum, vessel for holding	July 25, 1865.
49,493	Barquet, Listen W	New York, N. Y	Spittoons	Aug. 22, 1865.
2,060	Barrett, Edward D., assignor to self and H. B. Bigelow	New Haven, Conn	Engines, steam (Reissue)	Aug. 29, 1865.
50,549	Barrett, E. L	Springfield, Ohio	Envelope	Oct. 24, 1865.
46,987	Barron, Thomas J	Brooklyn, N. Y	Liquids, inflammable, so as to prevent accidents, mode of preparing.	Mar. 28, 1865.
50,325	Barth, Henry	Cincinnati, Ohio	Shears for cutting metal	Oct. 10, 1865.
	Barth, Henry, and Charles Wells. (*See* Wells & Barth.)			
49,494	Bartholomew, Seth W	Burr Oak, Mich	Stove-pipe thimble	Aug. 22, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,082	Bartholow, Roberts	Cincinnati, Ohio	Blacking, &c., manufacture of	Apr. 4, 1865.
47,083	Bartholow, Roberts	Cincinnati, Ohio	Oil for paint	Apr. 4, 1865.
47,084	Bartholow, Roberts	Cincinnati, Ohio	Petroleum, for the manufacture of paints, &c., process of preparing.	Apr. 4, 1865.
49,363	Bartle, Thompson C	Independence, Iowa	Sugar-evaporator	Aug. 15, 1865.
	Bartlett, F. C., and Wm. F. Morgan. (*See* Morgan & Bartlett.)			
49,694	Bartlett, H. F	La Grange, Mo	Evaporating pans	Sept. 5, 1865.
	Bartlett, James C., and Joseph F. Wilson. (*See* Wilson & Bartlett.)			
47,916	Bartlett, John W	Harmar, Ohio	Digger and separator, potato	May 30, 1865.
46,064	Bartlett, Joseph W	New York, N. Y	Sewing machines	Jan. 31, 1865.
2,180	Bartlett, Joseph W	New York, N. Y	Sewing machine, frame of a (Design)	Oct. 10, 1865.
2,215	Bartlett, Joseph W	New York, N. Y	Sewing machine, standard and treadle of a (Design)	Nov. 7, 1865.
47,271	Bartlett, Stephen S	Providence, R. I	Spinning frames, self-lubricating spindle, bolsters of	Apr. 18, 1865.
47,691	Bartlett, Stephen S	Providence, R. I	Harvesters	May 16, 1865.
47,692	Bartlett, Stephen S	Providence, R. I	Mowing machines	May 16, 1865.
1,852	Bartlett, Stephen S., assignor to self and Thomas H. Dodge	Providence, R. I	Mortising machines (Reissue)	Jan. 17, 1865.
	Bartlett, Wm. C., and Chas. Evans. (*See* Evans & Bartlett.)			
	Bartol, B. H. (*See* Bechtel, William H., assignor.)			
	Bartol, Henry W., and Alexander N. Glass. (*See* Glass & Bartol.)			
	Barton, G. S., *et al.* (*See* Ingram, James D., assignor.)			
48,642	Barton, Henry	Baltimore, Md	Shells, explosive, compound	July 11, 1865.
47,380	Barton, Lester B	Metamora, Ill	Cultivators	Apr. 25, 1865.
50,439	Barton, Lester B	Metamora, Ill	Cultivators	Oct. 17, 1865.
46,623	Barton, William E	East Hampton, Conn	Sleigh bells to straps, attaching	Mar. 7, 1865.
48,039	Barton, William E	East Hampton, Conn	Buckle attachment	June 6, 1865.
48,040	Barton, William E	East Hampton, Conn	Sleigh bell attachment	June 6, 1865.
50,870	Bartram, Walker B., assignor to self and Henry B. Fanton	Redding, Conn	Sewing machine, button hole	Nov. 7, 1865.
49,191	Bassett, Charles H., assignor to the Birmingham Button Company	Birmingham, Conn	Ivory, machines for cutting rings from	Aug. 1, 1865.
51,003	Bassett, D	Killingly, Conn	Looms, let-off and take-up motion for	Nov. 21, 1865.
46,770	Bassett, John A	Salem, Mass	Burners for carburetted air	Mar. 14, 1865.
46,771	Bassett, John A	Salem, Mass	Air, apparatus for carburetting	Mar. 14, 1865.
47,272	Bassett, John A	Salem, Mass	Air, apparatus for carburetting	Apr. 18, 1865.
47,273	Bassett, John A	Salem, Mass	Barrel for holding oil	Apr. 18, 1865.
47,786	Bassett, John A	Salem, Mass	Burner, gas	May 23, 1865.
50,675	Bassett, John A	Salem, Mass	Air, apparatus for carburetting	Oct. 31, 1865.
49,823	Bassett, John A., assignor to Oliver Bennett	Salem, Mass	Furnaces, steam blowers for	Sept. 5, 1865.
46,624	Bassett, J. A., and E. L. Norfolk	Salem, Mass	Combustion, system of supporting	Mar. 7, 1865.
48,011	Bassett, J. A., and O. C. Smith, assignors to Oliver Bennett	Salem, Mass	Air injectors	May 30, 1865.
	Bassett, R. M., *et al.* (*See* Shepard, William A., assignor.)			
	Bassett, R. N., *et al.* (*See* Mallory, William H., assignor.)			
46,206	Batchelder, John M	Cambridge, Mass	Petroleum, vessels for holding	Feb. 7, 1865.
48,643	Batchelder, William	Newburyport, Mass	Bridges, trusses for	July 11, 1865.
46,538	Batchelder, William W	New York, N. Y	Lamps	Feb. 28, 1865.
47,381	Batchelder, W. W	New York, N. Y	Burners, coal oil	Apr. 25, 1865.
51,508	Batcheller, Charles, assignor to self, E. Parks, and J. R. Sherman	Keene, N. H	Wells, apparatus for boring	Dec. 12, 1865.

	Batchelor, C. W., *et al.* (*See* Ross, Johnston, assignor.)			
50,788	Batchelor, J. D	Upton, Mass	Boot crimping machine	Nov. 7, 1865.
50,891	Batchelor, S. B	Lowville, N. Y	Scythe snaths	Nov. 14, 1865.
	Bates, Albert G., and Silas S. Mowry. (*See* Mowry & Bates.)			
46,625	Bates, Benjamin F., and Charles R. Macy	New York, N. Y	Ordnance and projectiles	Mar. 7, 1865.
47,917	Bates, Caleb	Kingston, Mass	Stencil plates, apparatus for applying paint to	May 30, 1865.
48,892	Bates, Caleb	Kingston, Mass	Wells, drills for boring	July 25, 1865.
	Bates, Robert	Philadelphia, Pa	Stammering, instruments for the cure of (Extension.)	Sept. 29, 1865.
47,693	Bates, William E	Elmore, Ill	Cultivators	May 16, 1865.
46,626	Bates, William N	Centre Point, Iowa	Seeding machine	Mar. 7, 1865.
	Bates, Wm. S., and Catharine S. Smith, administrators, &c. (*See* Smith, John.)			
51,542	Battelle, Joseph W	Worcester, Mass	Knife polisher	Dec. 19, 1865.
49,467	Battley, Edwin, assignor to self and James Crane	Mont Clair, N. J	Paint	Aug. 15, 1865.
49,962	Batty, L. M	Canton, Ohio	Mowing machines	Sept. 19, 1865.
49,963	Batty, L. M	Canton, Ohio	Harvesting machines	Sept. 19, 1865.
49,964	Batty, L. M	Canton, Ohio	Harvesters, rake attachments to	Sept. 19, 1865.
	Batty, William, and James Nichols. (*See* Nichols & Batty.)			
49,364	Bauer, Peter	Newark, N. J	Punch, spring	Aug. 15, 1865.
46,627	Baugh, Edwin P	Philadelphia Pa	Mills, bone	Mar. 7, 1865.
47,610	Baugh, Edwin P	Philadelphia, Pa	Lime, superphosphate of, mode of manufacturing	May 9, 1865.
47,611	Baugh, Edwin P	Philadelphia, Pa	Manure, method of treating	May 9, 1865.
	Baugh. J. P., E. P. and D. (*See* Adamson, William, assignor.) Reissue			
51,682	Baum, C. C	Oxford, Iowa	Plough cultivator	Dec. 26, 1865.
48,253	Baumeister, John	Detroit, Mich	Heater, water, stove pipe	June 20, 1865.
46,988	Baur, Julius	New York, N. Y	Barrels for holding oil, &c., process for lining	Mar. 28, 1865.
47,510	Baur, Julius	Brooklyn, N. Y	Steel, manufacture of	May 2, 1865.
48,041	Baur, Julius	Brooklyn, N. Y	Barrels, oil, composition for lining	June 6, 1865.
49,215	Baur, Julius	Brooklyn, N. Y	Barrels impervious to petroleum, &c., process for rendering. (Antedated July 24, 1865.)	Aug. 8, 1865.
49,495	Baur, Julius	New York, N. Y	Steel, manufacture of	Aug. 22, 1865.
47,382	Bausch, J. J., assignor to Bausch & Lomb	Rochester, N. Y	Microscopes	Apr. 25, 1865.
49,216	Bausman, Abner L	Minneapolis, Minn	Ploughs, snow	Aug. 8, 1865.
46,326	Bavier, John	Newark, N. J	Buckles	Feb. 14, 1865.
49,989	Bavier, John	Newark, N. J	Tobacco smoke purifier	Mar. 28, 1865.
46,065	Baxendale, Samuel	South Malden, Mass	Wadding, &c., machine for surface sizing	Jan. 31, 1865.
	Baxter, Henry, and John A. Fitch. (*See* Gibson, Wm., assignor.)			
46,870	Baxter, James P	Portland, Me	Pipe, smoking	Mar. 21, 1865.
2,181	Baxter, James P	Portland, Me	Trade mark (Design)	Oct. 10, 1865.
	Bay State Hardware Company. (*See* Miles, Nathaniel, assignor.)			
48,506	Bayard, R. B	Philadelphia, Pa	Fuel, artificial	July 4, 1865.
47,383	Baylor, Charles F	Clinton, N. J	Churns	Apr. 25, 1865.
	Baymount, N. P., *et al.* (*See* Ochiltree & Johnson, assignors.)			
49,695	Beach, A. Ely	Stratford, Conn	Cars, railroad	Sept. 5, 1865.
49,696	Beach, A. Ely	Stratford, Conn	Railroads, draught cables for	Sept. 5, 1865.
49,697	Beach, A. Ely	Stratford, Conn	Railroads, sliding draught cables for	Sept. 5, 1865.
49,698	Beach, A. Ely	Stratford, Conn	Railroads, tracks for	Sept. 5, 1865.
49,699	Beach, A. Ely	Stratford, Conn	Letters, packages, &c., mode of transporting and delivery	Sept. 5, 1865.
2,104	Beach, E. B., assignor through *mesne* assignments to George H. and J. T. Clark.	Meriden, Conn	Chucks, self centring (Reissue.)	Nov. 14, 1865.
51,285	Beach, Frederick C	Stratford, Conn	Fork and sharpener, combined	Dec. 5, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
50,789	Beach, H. H.	Rome, N. Y.	Dryer, grain	Nov. 7, 1865.
47,694	Beadle, J. Lowden	Ashland, Pa	Ventilating of mines	May 16, 1865.
	Beaire, Joseph. (*See* Van Kannel, Theophilus, assignor.)			
49,365	Beall, John, and Samuel K. Shaffer	Decatur, Ill.	Bolts, flour	Aug. 15, 1865.
46,207	Beals, Fordyce	New Haven, Conn	Cartridge, retractor for breech-loading fire arms	Feb. 7, 1865.
48,893	Beals, Isaac N	Middleboro', Mass	Washing machine	July 25, 1865.
50,550	Beals, J. S	Alabama Centre, N. Y.	Racks, sheep	Oct. 24, 1865.
	Beamis, T. W. (*See* Dexter, T. B., assignor.)			
51,383	Bean, Edwin E., assignor to self and Jacob Chickering	Abington, Mass	Sewing machines, waxed thread, chain-stich	Dec. 5, 1865.
46,419	Beanes, E., and C. W. Finzel, assignors to selves and T. A. Havemyer.	England	Sugar boiling	Feb. 14, 1865.
48,644	Beard, George	Salineville, Ohio	Measures for the human body	July 11, 1865.
47,918	Beardslee, George W	College Point, N. Y.	Conducting wires, coupling	May 30, 1865.
46,334	Beardsley, Rowland J	Brooklyn, N. Y.	Caster for furniture	Feb. 14, 1865.
50,676	Bearly, David	New Castle, Ind.	Saws, cross-cut, to their handles, attaching	Oct. 31, 1865.
50,986	Bearly, David, assignor to James J. Hamilton	New Castle, Ind.	Meat cutter	Nov. 14, 1865.
48,894	Beaton, William	Grinnell, Iowa	Washing machine	July 25, 1865.
48,357	Beatty, John P	Norwalk, Conn	Hats	June 27, 1865.
48,012	Bechtel, William H., assignor to self and B. H. Bartol	Philadelphia, Pa	Wells, boring	May 30, 1865.
	Beck, William. (*See* Valentine & Ridout, assignors.)			
	Beck, William. (*See* Valentine & Ridout, assignors.)			
	Beck, William. (*See* Valentine & Ridout, assignors.)			
	Becker, Vroman, and James Kline. (*See* Kline & Becker.)			
51,412	Beckman, H. B	Newburyport, Mass	Engines, steam, automatic stop motion for	Dec. 12, 1865.
51,669	Beckwith, Emos P., deceased, by William Smith, executor	Windham, Conn	Paper-cutting machine	Dec. 19, 1865.
51,413	Beckwith, James R	New Orleans, La	Fibrous plants from pulpy matter, machine for separating	Dec. 12, 1865.
	Beckwith, L. H., *et. al.* (*See* Colgan, Michael, assignor.)			
50,790	Beckwith, S. R	Cleveland, Ohio	Granaries and fruit houses	Nov. 7, 1865.
49,965	Bedell, Otis F	New York, N. Y.	Picture-frames, machine for bevelling	Sept. 19, 1865.
48,507	Bedell, O. F	New York, N. Y.	Egg holder and packer	July 4, 1865.
49,598	Bedson, George	Great Britain	Wire, apparatus for rolling	Aug. 22, 1865.
49,700	Bee, Benjamin F	Harwich, Mass	Dice, instrument for throwing	Sept. 5, 1865.
	Beebe, James P., and Levi M. Sandford. (*See* Sandford & Beebe.)			
46,966	Beekman, A., assignor to Theodore and Charles Wenzel	New York, N. Y.	Sawing machines	Mar. 21, 1865.
	Beemer, Levi. (*See* Williamson, J. H., assignor.)			
	Beers, Charles C. (*See* St. John, C., assignor.)			
47,919	Beers, Horace, assignor to self and Smith & Burnham	Brookfield, Conn	Hay spreaders	May 30, 1865.
49,847	Beers, John D	Philadelphia, Pa	Steam generators	Sept. 12, 1865.
	Beers, Philo S	Hamden, Conn	Turning irregular forms, machine for (Extension)	Feb. 11, 1865.
48,895	Beers, Wheeler	Bridgeport, Conn	Vehicles, axles for	July 25, 1865.
49,970	Behel, Jacob	Rockford, Ill	Reaping machines, binding attachments to	Sept. 19, 1865.
47,384	Behr, Adolph, and William James Ward	Black Hawk, Colorado Ter.	Amalgamating gold, &c., shaking and rocking table for	Apr. 25, 1865.
50,326	Behrens, Henry I	New York, N. Y.	Ore crushing stamps	Oct. 10, 1865.
45,904	Belbin, William	Baltimore, Md	Oyster dredges	Jan. 17, 1865.
46,628	Belchambers, A	Ripley, Ohio	Harvesting machines	Mar. 7, 1865.

	Belcher, B. B. (*See* Gale, Warren, assignor.) Reissue.			
	Belcher, B. B. (*See* Gale, Warren, assignor.) Reissue.			
49,366	Belfield, Henry	Philadelphia, Pa	Steam generators, water gauge for	Aug. 15, 1865.
51,683	Bell, J. C	Pawnee City, N. T	Evaporator	Dec. 26, 1865.
46,333	Bell, Thomas	Bellport, N. Y	Vessels, sunken, mode of raising	Feb. 14, 1865.
45,788	Bell, William G., assignor to William G. Bell & Co	Boston, Mass	Meat cutter	Jan. 3, 1865.
46,291	Bell, William S., assignor to self and William S. Bell, jr	Boston, Mass	Collars, paper, folding	Feb. 7, 1865.
48,148	Bell, William S., jr	Boston, Mass	Collars, paper	June 13, 1865.
	Bell, W. S., jr., and Chas. Spofford. (*See* Spofford & Bell.)			
	Bellamy, C. L. (*See* Secor, Oliver P, assignor.)			
	Bellows, W. S., *et al.* (*See* Field, L. C., assignor.)			
51,254	Belser, James H., assignor to self and Sydney G. Fay	Marlboro', Mass	Boots and shoes, machines for shaving heels of	Nov. 28, 1865.
1,856	Bemis, William A	Lyndon Centre, Vt	Pumps (Reissue)	Jan. 31, 1865.
51,684	Bench, George and William	Auburn, N. Y	Wagon brake	Dec. 26, 1865.
	Benedict and Burnham, manufacturing company. (*See* Croft, Edward, assignor.)			
46,772	Benedict, Philander H	Syracuse, N. Y	Buttons	Mar. 14, 1865.
48,645	Bener, B. H., and M. H. Burgess	Erie, Pa	Candy, medicated	July 11, 1865.
	Benner, L. D., and W. R. Evans. (*See* Evans & Benner.)			
47,274	Bennett, Anthony A	Norwalk, Conn	Carding engines, waste-saving attachment to	Apr. 18, 1865.
49,947	Bennett, Charles F., assignor to Maria Bennett	Philadelphia, Pa	Cloth drying machines	Sept. 12, 1865.
	Bennett, Edwin. (*See* Gillinder, William T., assignor.)			
48,761	Bennett, Edwin, assignor to self and W. T. Gillinder	Philadelphia, Pa	Furnace, annealing	July 11, 1865.
	Bennett, Edwin, and W. T. Gillinder. (*See* Gillinder & Bennett.)			
47,385	Bennett, Jacob B., and James S. Gibbs	Buffalo, N. Y	Soap, manufacture of	Apr. 25, 1865.
49,701	Bennett, J. R., and P. W. Birck	Brooklyn, N. Y	Table and bedstead combined	Sept. 5, 1865.
48,149	Bennett, Noah	Sherman, N. Y	Apples, machine for coring, slicing, and stringing	June 13, 1865.
	Bennett, Oliver. (*See* Bassett & Smith, assignors.)			
	Bennett, Oliver. (*See* Bassett, John A., assignor.)			
50,551	Bennett, Silas	New Castle, Pa	Heat from a furnace, apparatus for utilizing	Oct. 24, 1865.
50,677	Bennett, William H	Utica, N. Y	Barrel heads, cutters for	Oct. 31, 1865.
46,438	Benoit, Charles Petit	Detroit, Mich	Tool holder, adjustable	Feb. 21, 1865.
	Benrims, Joseph. (*See* Henry, Levi J., assignor.)			
	Benson, D. P., *et al.* (*See* Oliver, William G., assignor.)			
45,688	Bent, Samuel S	New York, N. Y	Register and summer piece, combined	Jan. 3, 1865.
	Bentley, Daniel, and Alexander W. Hall. (*See* Hall & Bentley.)			
46,439	Bentley, George J	Michigan City, Ind	Hoops, machine for riving	Feb. 21, 1865.
47,676	Bentley, George W., assignor to self and Charles S. Hine	New York, N. Y	Boxes, blacking, manufacture of	May 9, 1865.
47,892	Bentley, George W., assignor to self and Charles S. Hine	New York, N. Y	Boxes of sheet metal, machine for manufacturing	May 23, 1865.
46,990	Benton, John B	New York, N. Y	Water meters. (Antedated March 12, 1865)	Mar. 28, 1865.
	Benz, J., *et al.* (*See* Dupper, Charles F., assignor.)			
	Bequet, J. G., and A. A. Foubert. (*See* Foubert & Bequet.)			
49,848	Berdan, Hiram	New York, N. Y	Gun wipers	Sept. 12, 1865.
45,898	Berdan, Hiram, assignor to L. P. Morton, trustee of H. Berdan, A. A. Selover, and William B. Benson.	New York, N. Y	Fire-arms, breech-loading, rifling	Jan. 10, 1865.
45,899	Berdan, Hiram, assignor to L. P. Morton, trustee of H. Berdan, A. A. Selover, and William B. Benson.	New York, N. Y	Fire-arms, breech-loading	Jan. 10, 1865.
45,901	Berdan, Hiram, assignor to L. P. Morton, trustee of H. Berean, A. A. Selover, and William B. Benson.	New York, N. Y	Fire-arms, attaching bayonets to	Jan. 10, 1865.
46,292	Berdan, Hiram, assignor to L. P. Morton, trustee of H. Berdan, A. A. Selover, and William B. Benson.	New York, N. Y	Cartridges for breech-loading rifled fire-arms	Feb. 7, 1865.
2,163	Berg, Ezechel	New York, N. Y	Sign (Design)	Aug. 15, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Bergman, Henry, and R. Borcherdt. (*See* Borcherdt & Bergman.)			
47,787	Berg, Herman	Union Hill, N. J	Burner, gas	May 23, 1865.
46,629	Bergen, George I	Galesburg, Ill	Planters, corn	Mar. 7, 1865.
49,601	Bergen, George I	Galesburg, Ill	Planters, corn	Aug. 29, 1865.
1,935	Bergen, George I	Galesburg, Ill	Planters, corn (Reissue)	Apr. 18, 1865.
2,134	Berger, Henry	New York, N. Y	Lincoln, A., bust of (Design)	July 18, 1865.
46,066	Bergner, Theodore	Philadelphia, Pa	Photographs, instrument for cutting	Jan. 31, 1865.
46,440	Bergstretter, Edwin L	Berrysburg, Pa	Churns	Feb. 21, 1865.
49,335	Berry, C. M., and Charles C. Sheldrake, assignors to selves and J. Bready.	Philadelphia, Pa	Soda fountains, sirup stand for	Aug. 8, 1865.
49,051	Bessemer, Henry	England	Iron and steel, manufacture of. (Patented in England March 15, 1856.)	July 25, 1865.
49,052	Bessemer, Henry	England	Iron and steel, manufacture of. (Patented in England May 31, 1856.)	July 25, 1865.
49,053	Bessemer, Henry	England	Iron and steel, manufacture of. (Patented in England January 24, 1857.)	July 25, 1865.
49,054	Bessemer, Henry	England	Iron and steel, process for manufacturing axles, &c., from. (Patented in England March 16, 1859.)	July 25, 1865.
49,055	Bessemer, Henry	England	Iron and steel, machine for the manufacture of. (Patented in England March 1, 1860.)	July 25, 1865.
51,397	Bessemer, Henry	England	Iron and steel, manufacture of. (Patented in England February 1, 1861.)	Dec. 5, 1865.
51,398	Bessemer, Henry	England	Iron and steel, manufacture of. (Patented in England January 8, 1862.)	Dec. 5, 1865.
51,399	Bessemer, Henry	England	Iron and steel, malleable, manufacture of. (Patented in England January 13, 1863.)	Dec. 5, 1865.
51,400	Bessemer, Henry	England	Iron and steel, malleable, manufacture of. (Patented in England January 13, 1863)	Dec. 5, 1865.
51,401	Bessemer, Henry	England	Iron and steel, malleable, manufacture of. (Patented in England November 5, 1863.)	Dec. 5, 1865.
	Best, Isaiah. (*See* Brewer & Wimer, assignors.)			
49,217	Best, Jacob H	Schenectady, N. Y	Water elevators	Aug. 8, 1865.
45,809	Best, John	Pittsburg, Pa	Glass, manufacture of	Jan. 10, 1865.
49,218	Betteley, Albert	Boston, Mass	Fuel, preparing peat for	Aug. 8, 1865.
51,004	Betteley, Albert	Boston, Mass	Fuel, preparation of peat for	Nov. 21, 1865.
49,069	Betts, Henry	Norwalk, Conn	Paper stock, manufacture of	Aug. 1, 1865.
51,005	Betts, Lewis F	St. Louis, Mo	Lanterns	Nov. 28, 1865.
47,612	Betzel, Charles W	Philadelphia, Pa	Trusses	May 9, 1865.
46,773	Bevan, John	New York, N. Y	Water pipes, from bending, apparatus for preventing	Mar. 14, 1865.
48,358	Bever, John T	Bethel, Ill	Cultivators	June 27, 1865.
51,286	Bever, John T	Bethel, Ill	Cultivators	Dec. 5, 1865.
48,615	Beyer, Jacob, assignor to self and John E. Smith	Buffalo, N. Y	Wells, mode of extracting drills from	July 4, 1865.
50,871	Beyse, I. O., assignor to self and J. Utossy	St. Louis, Mo	Photographic prints, process for coloring	Nov. 7, 1865.
47,511	Bez, George	Mokena, Ill	Evaporating pan	May 2, 1865.
	Bez, G., *et al.* (*See* Grenell, Bez & Stoll.)			

48,896	Bibby, John, and Allen Lapham	Brooklyn, N. Y	Stills for distilling petroleum	July 25, 1865
	Bichet, J. L., and Geo. Goudlefinger. (*See* Goudlefinger & Bichet.)			
47,695	Bickel, August	Philadelphia, Pa	Crutches	May 16, 1865.
48,042	Bickel, Henry	Elizabeth, N. J	Power-gaining machine	June 6, 1865.
48,785	Bickel, William	Pottsville, Pa	Drills for boring rocks, &c	July 18, 1865.
	Bickford, Allen P. (*See* Labounty, Leonard J., assignor.)			
48,043	Bickford, Dana	Boston, Mass	Air engines	June 6, 1865.
49,070	Bickford, Dana	Boston, Mass	Engines, rotary	Aug. 1, 1865.
51,006	Bickford, Dana	Boston, Mass	Loom shuttles, mechanism for operating	Nov. 21, 1865.
51,128	Bickford, Dana	Boston, Mass	Air, apparatus for carburetting	Nov. 28, 1865.
51,129	Bickford, Dana	Boston, Mass	Elevators, hydraulic	Nov. 28, 1865.
47,677	Bickford, John S., assignor to self and Joseph Toy	Great Britain	Fuze for blasting, &c	May 9, 1865.
45,946	Bidwell, J. A., assignor to self, H. T. Litchfield, D. M. Robertson, and A. Church.	Boston, Mass	Screw-nicking machine	Jan. 17, 1865.
	Bidwell, J A., and D. M. Robertson. (*See* Robertson & Bidwell.)			
47,161	{ Bielefield, F. G { Schwartz, C. C. E	Prussia Hamburg	Cork pull	April 4, 1865.
51,130	Bigelow, Edmund	Springfield, Mass	Soda water, &c., apparatus for cooling	Nov. 28, 1865.
48,359	Bigelow, Gilbert F	Chicago, Ill	Collars, paper	June 27, 1865.
	Bigelow, H. B., *et al.* (*See* Barrett, Edw'd D., assignor.) Reissue.			
50,440	Bigelow, Lewis H	Philadelphia, Pa	Horseshoe machines	Oct. 17, 1865.
	Bigelow, S. O., *et al.* (*See* Oliver, William G., assignor.)			
46,630	Bill, H. W	Cuyahoga Falls, Ohio	Reaping machines	Mar. 7, 1865.
	Billard, Joshua Y. (*See* Reed, John C., assignor.)			
46,774	Billings, George W	New York, N. Y	Bleaching, preparation of cloth and vegetable fibre for. (Antedated February 27, 1865.	Mar. 14, 1865.
50,414	Billings, Jasper, assignor to self, Thos. D. Mitchell, and A. Kuhns	Dayton, Ohio	Drying house, fruit	Oct. 10, 1865.
45,957	Billings, William B	New York, N. Y	Stove, coal-oil	Jan. 17, 1865.
50,892	Billings, William B	New York, N. Y	Lamps, coal-oil, for cooking purposes	Nov. 14, 1865.
49,702	Billou, Louis	Brooklyn, N. Y	Collars, metallic	Sept. 5. 1865.
49,703	Billou, Louis	Brooklyn, N. Y	Shirt bosoms, metallic	Sept. 5, 1865.
51,414	Billou, Louis	Brooklyn, N. Y	Watch escapements	Dec. 12, 1865.
	Bindtner, J., *et al.* (*See* Boschan, Bindtner & Caffon.)			
46,208	Bingham, E. B	Newark, N. J	Twine from paper, process of manufacturing	Feb. 7, 1865.
51,287	Bingham, Solon	Troy, N. Y	Rakes, horse	Dec. 5, 1865.
	Binney, Benjamin S, (*See* Goodale, E. W., assignor.)			
46,331	Binney, John	Boston, Mass	Lamps, lanterns, &c., street	Mar. 7, 1865.
48,706	Birchard, J. F	Milwaukee, Wis	Air, apparatus for carburetting	July 11, 1865.
46,441	Birchmeyer, Paul	Syracuse, N. Y	Cannon, brushes for	Feb. 21, 1865.
	Birck, P. W., and J. R. Bennett. (*See* Bennett & Birck.)			
	Bird, Charles G. (*See* Arnold, Varnum G., assignor.)			
48,044	Bird, James	New York, N. Y	Hoisting machine	June 6, 1865.
45,958	Bird, Joseph C	Rising Sun, Md	Horse powers, safety brakes for	Jan. 17, 1865.
	Bird, Lewis J. (*See* Weed, Alfred, assignor.)			
51,288	Bird, W., and Joseph T	Flemington, N. J	Beef, dried, and vegetable cutter	Dec. 5, 1865.
50,678	Birkey, John Q	Philadelphia, Pa	Heater, gas	Oct. 31, 1865.
	Birmingham Button Company. (*See* Bassett, Chas. H., assignor.)			
49,071	Bishop, Abner W	York, Ohio	Pokes, animal	Aug. 1, 1865.
48,786	Bishop, Caleb G	Poughkeepsie, N. Y	Churns	July 18, 1865.
	Bishop, Charles, and Thomas Neely. (*See* Neely & Bishop.)			
46,209	Bishop, Charles L	Meriden, Conn	Moulders' bench	Feb. 7, 1865.
47,386	Bishop, E. F	Burton, Ohio	Straw cutters and feed mixer combined	Apr. 25, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
49,966	Bishop, Frederick W	West Haven, Conn	Wagons, freight, shipping and unshipping hind boards to. (Antedated August 31, 1865.)	Sept. 19, 1865.
47,180	Bishop, J. W	New Haven, Conn	Boiler feeders	Apr. 11, 1865.
47,181	Bishop, J. W	New Haven, Conn	Boiler feeders, automatic	Apr. 11, 1865.
47,182	Bishop, J. W	New Haven, Conn	Steam traps	Apr. 11, 1865.
47,183	Bishop, J. W	New Haven, Conn	Low-water indicators	Apr. 11, 1865.
47,184	Bishop, J. W	New Haven, Conn	Water regulator	Apr. 11, 1865.
	Bishop, Richard F., and Wm. Gladden. (*See* Gladden & Bishop.)			
46,750	Bishop, Samuel C., assignor to the Bishop Gutta-percha Company	New York, N. Y.	Telegraph wires, composition for insulating	Mar. 7, 1865.
45,965	Bishop, Stephen T., and Andrew Steveley	Fond du Lac, Wis	Horse-power elevator and excavator	Jan. 24, 1865.
45,966	Bishop, Stephen T., and Andrew Steveley	Fond du Lac, Wis	Horse-power elevator and excavator	Jan. 24, 1865.
45,967	Bishop, Stephen T., and Andrew Steveley	Fond du Lac, Wis	Horse-power elevator and excavator	Jan. 24, 1865.
45,968	Bishop, Stephen T., and Andrew Steveley	Fond du Lac, Wis	Horse-power elevator and excavator	Jan. 24, 1865.
47,788	Black, Andrew	New York, N. Y.	Rendering pan	May 23, 1865.
50,415	Black, Horatio N., assignor to self, Wm. L. and Henry K. Boyer.	Philadelphia, Pa	Car spring	Oct. 10, 1865.
	Black, Jas., and Robt. E. Rogers. (*See* Rogers & Black.) Reissue.			
51,543	Black, J. F., and W. L	Lancaster, Ill	Ploughs, gang	Dec. 19, 1865.
49,849	Blackburn, T. J., and E. P. Terrel	Spring Hills, Ohio	Chairs, invalid	Sept. 12, 1865.
50,893	Blackie, John	Washington, D. C	Wells, deep, ejectors for	Nov. 14, 1865.
49,824	Blackie, John, assignor to self, Wm. C. Dodge, and Wm. S. King.	Washington, D. C	Galvanic batteries	Sept. 5, 1865.
50,791	Blackmer, Ephraim N	McGrawville, N. Y	Potters' ware, machine for moulding	Nov. 7, 1865.
1,868	Blackwell, J. V., deceased, by Emma A. Blakwell, administratrix.	Ovid, N. Y	Clover, machine for hulling (Reissue)	Feb. 14, 1865.
51,289	Blair, Thomas S	Pittsburg, Pa	Furnaces for converting bars into steel	Dec. 5, 1865.
49,850	Blaisdell, William B., and James E. Atwood	Lynn, Mass	Carpet fastener	Sept. 12, 1865.
46,067	Blake, Alpheus D	Milton, Mass	Ventilator, centrifugal	Jan. 31, 1865.
47,893	Blake, George F., assignor to self, P. Hubbell, and Job A. Turner.	Medford, Mass	Water meters	May 23, 1865.
51,415	Blake, George F	Boston, Mass	Water meters	Dec. 12, 1865.
	Blake, Gorham. (*See* Clark, Anthony, assignor.)			
49,468	Blake, Henry D., assignor to P. and F. Corbin	New Britain, Conn	Padlocks	Aug. 15, 1865.
47,696	Blake, Lyman R	Boston, Mass	Boots and shoes, construction of	May 16, 1865.
49,219	Blake, Lyman R	Boston, Mass	Boot or shoe, nailed	Aug. 8, 1865.
	Blake, Lyman R., and Gordon McKay. (*See* McKay & Blake.)			
47,275	Blake, N. E	Almond, N. Y	Roof composition, fire-proof	Apr. 18, 1865.
45,689	Blake, Solomon E	Worcester, Mass	Bread and vegetable cutter	Jan. 3, 1865.
46,331	Blake, S. E	Worcester, Mass	Ice, device for cutting and shaving	Feb. 14, 1865.
45,690	Blake, Thomas S., and O. E. Mosher	New York, N. Y	Refrigerator. (Antedated Feb. 12, 1865.)	Jan. 3, 1865.
	Blakelee, Ges. E., and Orlando Barker. (*See* Barker & Blakelee.)			
47,085	Blakeney, John	Philadelphia, Pa	Boots and shoes, machines for securing soles to	Apr. 4, 1865.
45,691	Blakeslee, Charles F	New York, N. Y	Dolls, arms for	Jan. 3, 1865.
2,028	Blakeslee, Erastus	New Haven, Conn	Belt hook, military (Design)	Feb. 7, 1865.
1,881	Blakeslee, Erastus	New Haven, Conn	Cartridge-box (Reissue)	Feb. 7, 1865.
46,210	Blakeslee, Erastus	New Haven, Conn	Kit, mess	Feb. 7, 1865.
50,327	Blakeslee, E. G., and A. Mansel	Sing Sing, N. Y	Grate bars for steam generators	Oct. 10, 1865.
	Blamires, Thos. H., and Harry Marsden. (*See* Marsden & Blamires.)			

46,442	Blanchard, John	Pawtucket, R. I	Looms, hair-cloth, weft-feeding device for. (Antedated Feb. 16, 1865	Feb. 21, 1865.
50,441	Blanchard, Virgil W	Bridport, Vt	Harvesters	Oct. 17, 1865.
	Bless, J. F. and D. F. (*See* Drake, Robert, assignor.)			
48,150	Blessing, William	Jeffersonville, Ohio	Planters, corn	June 13, 1865.
48,254	Bleyer, Henry W	Buffalo, N Y	Lanterns, regulator for the wicks of	June 20, 1865.
50,679	Bleyley, A. T	Ottumwa, Iowa	Vegetable cutter	Oct. 31, 1865.
47,789	Blinn, Charles D	Port Huron, Mich	Bed bottom	May 23, 1865.
51,131	Blinn, Charles D	Port Huron, Mich	Blind, venetian, for windows	Nov. 28, 1865.
50,530	Bliss, Lyman C., assignor to self and John Griffith	Richmond, Ind	Planes, bench	Oct. 17, 1865.
51,416	Bliss, Orville S	Fairfield, Vt	Weighing apparatus	Dec. 12, 1865.
48,897	Blodgett, F. M	Boston, Mass	Gaiters, spring	July 25, 1865.
51,685	Bloedel, Henry	Fond du Lac, Wis	Tire cooler	Dec. 26, 1865.
	Bloeher, John, and Job S. Dawley. (*See* Dawley & Bloeher.)			
	Blomgrist, John. (*See* Lofvendahl, Joseph, assignor.)			
46,293	Blood, Abijah E. and Josiah B., assignors to selves and William J. and Benjamin F. Larabee.	Lynn, Mass	Coal and ash sifter	Feb. 7, 1865.
	Blood, A. E., and E. P. Woods. (*See* Woods & Blood.)			
49,367	Bloodgood, John H., and	New York, N. Y	Yarns, felted, manufacture of	Sept. 5, 1865.
	Moses A. Johnson	Lowell, Mass		
51,686	Bloom, Joseph Alexander	Philadelphia, Pa	Pumps	Dec. 26, 1865.
51,290	Blunt, Edmund	Brooklyn, N. Y	Compasses, liquid	Dec. 5, 1865.
45,789	Blythe, John E., assignor to M. Vedder and H. S. Myers	New York, N. Y	Gun, spring. (Antedated May 2, 1862.)	Jan. 3, 1865.
47,790	Boardman, Charles T	Pawtucket, R. I	Boilers, steam	May 23, 1865.
49,971	Boardman, Harris	Lancaster, Pa	Cork machines	Sept. 19, 1865.
48,478	Boardman, Horace, assignor to self, Kelly, De Milt & Co	New York, N. Y	Iron, wrought, from the ore, manufacture of	June 27, 1865.
49,220	Boch, Louis, and Albert F. Wheeler	Sheboygan, Wis	Cork, artificial	Aug. 8, 1865.
46,330	Boch, Henry	New York, N. Y	Buttons, machine for making	Feb. 14, 1865.
48,646	Bodge, John S	Bath, N. Y	Hoppers, feed-regulating mechanism for	July 11, 1865.
51,687	Bodge, John S	Bath, N. Y	Separators, grain	Dec. 26, 1865.
2,208	Bodtker, James F	Madison, Wis	Picture, emblematic (Design)	Oct. 24, 1865.
51,544	Bodwell, H. E., jr	Millburn, N. J	Sewing machines, device for controlling the spool-thread in	Dec. 19, 1865.
50,652	Boeklen, Rinhold, assignor to Henry T. Sisson	Brooklyn, N. Y	File, letter or invoice	Oct. 24, 1865.
49,221	Boeklen, R., and William Staehlen	Brooklyn, N. Y	Hydrometers	Aug. 8, 1865.
51,007	Boeklen, Rinhold	Brooklyn, N. Y	Pumps, deep-well	Nov. 21, 1865.
51,008	Boeklen, Rinhold	Brooklyn, N. Y	Oil ejectors	Nov. 21, 1865.
	Bogert, Horatio. (*See* Bradford, Hezekiah, assignor.)			
2,135	Boggs, William	New York, N. Y	Collars, cuffs, &c., paper (Design)	July 18, 1865.
49,851	Bogue, John	Auburn, Wis	Evaporator	Sept. 12, 1865.
46,539	Bohannan, William	New York, N. Y	Padlocks	Feb. 28, 1865.
2,223	Bohsert, Frederick	New York, N. Y	Pipe, sheet-metal, elbow of a (Design)	Dec. 5, 1865.
50,448	Boland, D. A	Pittsburg, Pa	Presses, upsetting	Oct. 17, 1865.
48,232	Bolender, Frederick C., assignor to self and William F. Doggett	Lima, Ohio	Broom head	June 13, 1865.
48,013	Boles, John, 2d	Boston, Mass	Bridges	May 30, 1865.
47,920	Boles, John, 2d	Boston, Mass	Bridges	May 30, 1865.
48,647	Boley, John	Baldwinsville, N. Y	Pumps	July 11, 1865.
46,046	Bolles, George N., assignor to S. W. Walker & Co	Kalamazoo, Mich	Wringing machine	Jan. 24, 1865.
46,175	Bolles, George N., assignor to S. W. Walker & Co	Kalamazoo, Mich	Washing machine	Jan. 31, 1865.
47,613	Bolles, Jesse N	Baltimore, Md	Tools, boring, coupling, shafts of	May 9, 1865.
50,680	Bollman, George W., and William Neemes	Pittsburg, Pa	Castings, chilled, making	Oct. 31, 1865.
46,632	Bolthoff, H	Burlington, Iowa	Amalgamating gold and silver, apparatus for	Mar. 7, 1865.
46,871	Bolton, James	Chicago, Ill	Sewing machines, tuck-creasing device for	Mar. 21, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
49,967	Bolton, James, and Jerome Secor	Chicago, Ill	Sewing machines, feeding device for	Sept. 19, 1865.
	Bond, E. T. (*See* Field, B. F., assignor.)			
	Bond, E. T. (*See* Field, B. F., assignor.)			
45,692	Bond, H. F	Waltham, Mass	Lampwicks, device for trimming	Jan. 3, 1865.
47,791	Bond, Joseph N. B	New York, N. Y	Boiler feeders, automatic	May 23, 1865.
50,894	Bond, W. E	Cleveland, Ohio	Ladder, fruit and step	Nov. 14, 1865.
	Bonnell, William H., and Harvey Ball. (*See* Sangster, Jas., assr.)			
47,697	Bonney, M	Mantua, Ohio	Shingles, machines for measuring and counting	May 16, 1865.
50,328	Bonwill, William G. A	Dover, Del	Screw-drivers. (Antedated August 27, 1865.)	Oct. 10, 1865.
46,872	Boon, Alonzo T., and William W. Spaulding	Galesburg, Ill	Mop. (Antedated February 1, 1865.)	Mar. 21, 1865.
50,792	Boon, Alonzo T., and Charles L. Stevens	Galesburg, Ill	Dryer, grain	Nov. 7, 1865.
51,123	Boote, Thomas L. and Richard	England	Pottery and such like wares, manufacture of. (Patented in England November 10, 1864.)	Nov. 21, 1865.
49,581	Booth, George, assignor to Porter & Booth	Philadelphia, Pa	Gridirons, sheet-metal	Aug. 22, 1865.
45,810	Bope, Jacob W	St. Louis, Mo	Harvesters	Jan. 10, 1865.
45,811	Bope, Jacob W	St. Louis, Mo	Harvesters, corn	Jan. 10, 1865.
45,905	Bope, Jacob W	St. Louis, Mo	Harvesters	Jan. 17, 1865.
45,906	Bope, Jacob W	St. Louis, Mo	Harvesters	Jan. 17, 1865.
51,009	Borcherdt, R., and Henry Bergman	Tompkinsville, N. Y	Composition for the manufacture of toys	Nov. 21, 1865.
2,103	Borden, Gail	America, N. Y	Milk, condensing (Reissue)	Nov. 14, 1865.
	Bordentown Machine Company. (*See* Molyneux, James, assignor.)			
	Bordentown Machine Company. (*See* Wright & Molyneux, assignors.)			
45,895	Boris, P. J	Nova Scotia	Grate, revolving	Jan. 10, 1865.
48,635	Boschan, Charles, J. Bindtner and William Caffon	Austria	Lamps	July 4, 1865.
	Bostwick, J. W., and Orsamus A. White. (*See* White & Bostwick.)			
	Bostwick, J. W., and Orsamus A. White. (*See* White & Bostwick.)			
50,895	Boswell, Daniel K	Corinth, Miss	Drying apparatus	Nov. 14, 1865.
49,072	Boswell, Edward H	Philadelphia, Pa	Brush, mucilage and marking	Aug. 1, 1865.
	Bosworth, Henry J., and William Ennis. (*See* Ennis & Bosworth.)			
46,443	Botters, Guiseppe	Boston, Mass	Leather and process of manufacturing the same	Feb. 21, 1865.
48,509	Bottomley, Henry	Camden, N. J	Wool, lubricating material for	July 4, 1865.
	Bottum, James M	New York, N. Y	Watches in lathes, securing pinions, &c., of (Extension.)	July 12, 1865.
47,276	Böttyer, Politorus	Newark, N. J	Saddles, harness	Apr. 18, 1865.
47,387	Boudreaux, Louis	Thibodeaux, La	Presses	Apr. 25, 1865.
48,508	Boughton, John W	Appleton, Wis	Bottles, mucilage, top for	July 4, 1865.
48,787	Boughton, John W	Appleton, Wis	Car-coupling	July 18, 1865.
	Bourne, Theodore. (*See* Stevens, John, assignor.)			
50,217	Bouton, Andrew	Napa, Cal	Cultivators	Oct. 3, 1865.
	Bouvier, John V., and Lindsay J. Howe. (*See* Howe & Bouvier.)			
50,896	Bowden, William	White's Corners, N. Y	Wells, oil, tool for removing obstacles from	Nov. 14, 1865.
47,086	Bowditch, J. Blair	New Haven, Ct	Bed-bottom spring	Apr. 4, 1865.
1,929	Bowen, Andrew J., assignor through *mesne* assignment to the Tobacco Pipe Company.	Baltimore, Md	Tobacco pipe (Reissue.)	Apr. 4, 1865.

	Bowen, Levi. (*See* Fairbanks, Edward, assignor.)			
46,068	Bowers, Isaac W	Ovid Centre, Mich	Stove machines	Jan. 31, 1865.
50,552	Bowers, Jacob	Connellsville, Pa	Ovens, coke	Oct. 24, 1865.
48,045	Bowers, James	New York, N. Y	Corsets	June 6, 1865.
48,788	Bowker, Daniel	Boston, Mass	Slipper, carpet	July 18, 1865.
49,073	Bowker, Milton	Fitchburg, Mass	Turning-gauge, conical	Aug. 1, 1865.
50,442	Bowker, Milton, assignor to Warren N. Abbott	Fitchburg, Mass	Punch, centre	Oct. 17, 1865.
51,782	Bowlsby, George W	Monroe, Mich	Stamps, postage, &c	Dec. 26, 1865.
49,704	Bowman, Lewis H	Norristown, Pa	Drill, oil	Sept. 5, 1865.
51,545	Boyd, John	Lowell, Mass	Carpet-stretcher	Dec. 19, 1865.
	Boyd, Robert H., and William W. Grier. (*See* Grier & Boyd.)			
	Boyd, Robert H., and William W. Grier. (*See* Grier & Boyd.)			
	Boyd, Samuel. (*See* Stearns & Corey, assignors.)			
46,294	Boyden, Seth, assignor to Henry H. Jacques	Newark, N. J	Fibrous materials, picking cylinder of machines for disintegrating.	Feb. 7, 1865.
	Boyer, B. Frank. (*See* Heller, Daniel C., assignor.)			
	Boyer, William L., and Henry K. (*See* Black, Horatio N., ass'r.)			
50,681	Boyle, Charles B	New York, N. Y	Photographic lenses. (Antedated October 25, 1865.)	Oct. 31, 1865.
	Boyle, David. (*See* Litchfield, Calvin A., assignor.) (Reissue.)			
49,585	Boyle, Robert, assignor to self and Guiseppe Tagliabue	New York, N. Y	Telegraph, electro-magnetic	Aug. 22, 1865.
47,614	Boyle, William H	Cazenovia, N. Y	Planters, corn	May 9, 1865.
49,674	Boynton, Edward S., assignor to the French Self-fastening Button Company.	New York, N. Y	Button to cords, securing	Aug. 29, 1865.
49,705	Boynton, John F	Syracuse, N. Y	Light, gas, multipliers	Sept. 5, 1865.
49,706	Boynton, John F	Syracuse, N. Y	Torpedoes for oil wells	Sept. 5, 1865.
4,510	Bracher, Thomas	New York, N. Y	Head, coverings for	July 4, 1865.
50,897	Brackett, Frederick	Calais, Me	Pen-holders. (Antedated November 5, 1865)	Nov. 14, 1865.
	Bradbury, Samuel A. (*See* Carey, A. C., assignor.)			
46,751	Bradfield, Charles, assignor to self and Paul Suenson	Newark, N. J	Clothes and hat rack	Mar. 7, 1865.
48,511	Bradford, E. F., and L. L. Barber	Boston, Mass	Sewing machines	July 4, 1865.
49,582	Bradford, George S., assignor to self and Clark Tompkins	Bennington, Vt	Bobbins, conical, machines for winding	Aug. 22, 1865.
46,520	Bradford, Hezekiah assignor to Horatio Bogert	New York, N. Y	Ore, roasting and desulphurizing. (Antedated Feb. 16, 1865)	Feb. 21, 1865.
	Bradley, C. E., *et al.* (*See* Cooley, Smith & Bradley.)			
	Bradley, David, and Conrad Furst. (*See* Lacey, John, assignor.)			
49,074	Bradley, Leverett	New York, N. Y	Magnets, helices for	Aug. 1, 1865.
48,479	Bradley, Leverett, assignor to Marshall Lefferts	Jersey City, N. J	Telegraphs, machines for perforating paper for	June 27, 1865.
49,222	Bradley, Miles	Westport, Ct	Knives, &c., attaching handles to	Aug. 8, 1865.
48,046	Bradshaw, John, and Samuel C. Wilson	Albion, N. Y	Stove-pipe damper	June 6, 1865.
47,512	Brady, Elijah	New York, N. Y	Bedstead sofa	May 2, 1865.
46,329	Brady, James	Philadelphia, Pa	Ordnance, sight for	Feb. 14, 1865.
49,968	Brady, J. W	Baltimore, Md	Sewing machines, corders for	Sept. 19, 1865.
46,633	Braggins, Edward	Titusville, Pa	Petroleum, &c., apparatus for distilling	Mar. 7, 1865.
49,368	Braid, William and George	New York, N. Y	Pipe-core, machine for making	Aug. 15, 1865.
45,693	Brainard, Amos H	Dorchester, Mass	Vises	Jan. 3, 1865.
51,402	Brakell, Christopher	England	Gins, cotton	Dec. 5, 1865.
51,546	Bramer, Frank	Fabius, N. Y	Harvesters	Dec. 19, 1865.
51,132	Bramhill, William	New York, N. Y	Chair bottoms and backs	Nov. 28, 1865.
46,176	Brand, Charles F., assignor to Harrison Brothers & Co	Philadelphia, Pa	Cans, paint, ears for	Jan. 31, 1865.
46,873	Brandenburg, Charles	New York, N. Y	Composition for preserving wood and coating oil barrels	Mar. 21, 1865.
46,444	Branson, Philip H	St. Louis, Mo	Lamp posts, street	Feb. 21, 1865.
	Brassington, W. J., and J. H. Raymond. (*See* Raymond & Brassington.)			
49,707	Bratt, Moses	Maysville, Ky	Stove	Sept. 5, 1865.

List of patentees, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
50,092	Brauer, Louis	Memphis, Tenn	Hydrometric apparatus	Sept. 26, 1865.
48,648	Braun, A. F. H	San Francisco, Cal	Violins, damper for	June 13, 1865.
49,369	Braun, John	Philadelphia, Pa	Looms	Aug. 15, 1865.
47,513	Bray, Mellen	Boston, Mass	Shoe-lacing	May 2, 1865.
49,496	Bray, Mellen	Boston, Mass	Hides, apparatus for removing hair from	Aug. 22, 1865.
51,421	Bray, Mellen	Boston, Mass	Metal, sheet, ware, machinery for forming	Dec. 12, 1865.
47,792	Brayton, George B	Boston, Mass	Engines, steam	May 23, 1865.
	Bready, J. (*See* Berry & Sheldrake, assignors.)			
47,793	Brear, Abel	Saugatuck, Ct	Oil ejectors	May 23, 1865.
49,602	Brear, Abel	Saugatuck, Ct	Liquid ejectors	Aug. 29, 1865.
51,255	Breckenridge, A. C., assignor to H. J. Hale	Meriden, Ct	Tobacco cartridges	Nov. 28, 1865.
46,874	Breckenridge, E. K	Meriden, Ct	Spring window	Mar. 21, 1865.
48,255	Bredt, Ernst	New York, N. Y	Baskets, means for manufacturing	June 20, 1865.
45,812	Breed, D. C	Lyndonville, N. Y	Carriages, coupling thills to	Jan. 10, 1865.
45,969	Breitenstein, William	New York, N. Y	Looms	Jan. 24, 1865.
51,688	Bremerman, Frederick	Indianapolis, Ind	Wagon hubs, machines for boring	Dec. 26, 1865.
	Brennan, John H., and Hiram T. Merrill. (*See* Merrill & Brennan.)			
47,367	Bresson, François	France	Lubricators	Apr. 18, 1865.
49,223	Brettell, E. W	Newark, N. J	Locks	Aug. 8, 1865.
48,360	Brewer, F	Collinsville, Ill	Motion, device for converting	June 27, 1865.
47,699	Brewer, James	Albany, Ill	Cultivators	May 16, 1865.
48,512	Brewer, James	Albany, Ill	Ploughs, sulky	July 4, 1865.
49,075	Brewer, James	Albany, Ill	Cultivators	Aug. 1, 1865.
	Brewer, James, and Theodore G. Pelton. (*See* Pelton & Brewer.)			
47,277	Brewer, James F., and Enos E. Stow	Plantsville, Conn	Whip sockets	Apr. 18, 1865.
48,361	Brewer, O H., and William Wymer, assignors to selves and Isaiah Best	Shannon, Ill / Freeport, Ill	Tanning, apparatus for	June 27, 1865.
	Brewer, S. C., and Daniel Churchill. (*See* Churchill & Brewer.)			
45,970	Brewster, P. S., and C. M. Hines	Lime Hill, Pa	Stone gatherers	Jan. 24, 1865.
	Brickell, D. Z., *et al.* (*See* Rinehart, William D., assignor.)			
49,192	Bricker, George, sen., assignor to self and George B. Hammer	Newville, Pa	Process of varnishing and polishing wood	Aug. 1, 1865.
	Bridge, Beach & Co. (*See* De Zouche, Isaac, assignor. Design.)			
2,070	Briggs, Albert D	Springfield, Mass	Bridges, truss (Reissue.)	Sept. 12, 1865.
2,026	Briggs, Edward T	Boston, Mass	Curtain fixture (Reissue.)	July 11, 1865.
	Briggs, George D., and Lysander Flagg. (*See* Flagg & Briggs.)			
47,278	Briggs, George W	Fiskville, R. I	Spinning &c., self-lubricating spindle, bearings for	Apr. 18, 1865.
48,362	Briggs, Harrison T	South Bend, Ind	Engines, steam, rotary	June 27, 1865.
	Briggs, Joseph. (*See* Greene, Ranson, assignor.)			
46,634	Briggs, Martin	Rochester, N. Y	Safes	Mar. 7, 1865.
47,388	Briggs, Robert	Philadelphia, Pa	Shafting, coupling for	Apr. 25, 1865.
47,185	Brigham, Daniel S	Worcester, Mass	Skate	Apr. 11, 1865.
46,991	Brightly, Charles H	Philadelphia, Pa	Valves, slide	Mar. 28, 1865.
51,010	Brinckerhoff, J. DeWitt	New York, N. Y	Photographic use, mode of preparing paper for	Nov. 21, 1865.
	Brink, A. L. (*See* Kepner, Benjamin H., assignor.)			
49,497	Brinkerhoff, C. R	Rochester, N. Y	Harvesting machines	Aug. 22, 1865.

46,540	Brinkerhoff, Jaeob	Auburn, N. Y	Corn-shellers	Feb. 28, 1865.
47,764	Bristol. C. B., assignor to self, William W. Hughes, William H. Andrews, and L. J. Bristol.	New Haven, Conn	Hook-snap	May 16, 1865.
50,443	Bristol, Richard C	Chicago, Ill	Valves, puppet, balanee. (Antedated Oetober 8, 1865.)	Oct. 17, 1865.
49,583	Broadwell, Lewis Wells, assignor to C. M. Clay	New Orleans, La	Fire-arms, breech-loading	Aug. 22, 1865.
47,921	Brockway, Jesse	Oswego, N. Y	Sorghum evaporator	May 30, 1865.
48,649	Brockway, Joseph	Cambria, N. Y	Straw-eutter	July 11, 1865.
49,336	Brodhead, Wessel, assignor to C. L. Edmonds	Rondout, N. Y	Boring tool	Aug. 8, 1865.
2,090	Brodie, James	San Franeiseo, Cal	Mills, stamp, and ore-erushers, apparatus for colleeting the dust from. (Reissue.)	Oct. 17, 1865.
48,650	Brombaeher, Charles	New York, N. Y	Paper, shears for eutting	July 11, 1865.
51,646	Bromwieh, Charles M., assignor to self and John R. Taft	South Boston, Mass	Cars, railway, sand-distributor for	Dee. 19, 1865.
	Bromwieh, C. M. (*See* Dearborn, G. K., assignor.)			
51,133	Bronson, Levi	Buffalo, N. Y	Tool for squaring the ends of shafting	Nov. 28, 1865.
	Bronson, P. K. (*See* Anderson, Philander, assignor.)			
48,151	Brooks, Charles B	Auburn, Maine	Press, baling	June 13, 1865.
	Brooks, Heman P., and Orin L. Hopson. (*See* Hopson & Brooks.)			July 11, 1865.
48,651	Brooks, John, and Charles F. Sylvester	North Bridgewater, Mass	Boot-eounter machine	Aug. 8, 1865.
49,224	Brooks, J. S	Rochester, N. Y	Blacking-box	May 30, 1865.
47,922	Brooks, Stephen P	Somerville, Mass	Piano-forte aetion. (Antedated May 21, 1865.)	Oct. 10, 1865.
50,329	Brooks, Thomas	Middletown, Conn	Chuek, self-eentring	Dec. 12, 1865.
51,417	Broomhal, Webb	Cireleville, Ohio	Fastening, gate	
	Brosius, J., *et al.* (*See* Penn, Geiss & Brosius.)			Dec. 26, 1865,
51,689	Brougher, D. J	Harrisburg, Pa	Broom head	Jan. 3, 1865.
45,694	Broughton, John	New York, N. Y	Lubricators	Mar. 7, 1865.
46,635	Broughton, John	New York, N. Y	Oil-eans	Dec. 12, 1865.
51,418	Broughton, John	New York, N. Y	Cocks, gauge	Dee. 12, 1865.
51,419	Broughton, John	New York, N. Y	Lubricators	July 11, 1865.
1,990	Brower, William G	New Brunswick, N. J	Hoisting maehine (Reissue.)	
	Brown, Amos. (*See* Kelsey, Albert, assignor.)			
	Brown, A., *et al.* (*See* Taylor, George G., assignor.)			
50,793	Brown, Augustus	New York, N. Y	Engine, steam, governors	Nov. 7, 1865.
46,069	Brown, Barelay	Byberry, Pa	Saeeharine liquids apparatus for evaporating	Jan. 31, 1865.
	Brown, Benjamin F. (*See* Roberts, Andrew J., assignor.)			
48,047	Brown, C. B. and William T	Alton, Ill	Threshing machines	June 6, 1865.
50,330	Brown, Charles C	Washington, D. C	Bistories	Oct. 10, 1865.
48,152	Brown, Charles E	Owego, N. Y	Cigars and tobaeeo, show-case for	June 13, 1865.
46,328	Brown, Charles S	New York, N. Y	Heating, steam, and fire-extinguishing apparatus	Feb. 14, 1865.
48,256	Brown, Charles S	New York, N. Y	Milk, apparatus for testing	June 20, 1865.
48,257	Brown, Clarence E	Florence, Mass	Calipers	June 20, 1865.
47,352	Brown, Daniel T., assignor to James H. MeWilliams	Newton, N. Y	Padlock	Apr. 18, 1865.
49,076	Brown, David, and William S. Wooton	Kokomo, Ind	Shoes	Aug. 1, 1865.
47,765	Brown, Ebenezer, assignor to S. E. Brown	South Boston, Mass	Thill-holder, metallie	May 16, 1865.
1,901	Brown, Edward, assignor to M. A. Furbush and G. Compton	Fall River, Mass	Looms (Reissue.)	Mar. 14, 1865.
48,513	Brown, Edwin	Leominster, Mass	Vehieles, breeching-hooks for	July 4, 1865.
50,682	Brown, Edwin	Leominster, Mass	Whiffletrees of vehieles, attaehing traces to	Oct. 31, 1865.
	Brown, Edwin Lee. (*See* Adams, Robert E., assignor.)			
2,085	Brown, Elias	Wappinger's Falls, N. Y	Comb (Design.)	June 13, 1865.
2,086	Brown, Elias	Wappinger's Falls, N. Y	Comb (Design.)	June 13, 1865.
50,898	Brown, Erasmus D	Buffalo, N. Y	Wells, deep, adjusting the packing of pistons in	Nov. 14, 1865.
49,969	Brown, F. C	Palmyra, N. Y	Dental purposes, apparatus for packing rubber for	Sept. 19, 1865.
51,291	Brown, Felix	New York, N. Y	Pumps, steam	Dec. 5, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Name of patentee.	Residence.	Invention or discovery.	Date.
51,547	Brown, Franklin H	Chicago, Ill	Sewing machines, guide and tuck marker for	Dec. 19, 1865.
46,615	Brown, George W	Galesburg, Ill	Planter, seed	Feb. 28, 1865.
	Brown, H., and G. Smith. (*See* Smith & Brown.) (Design.)			
	Brown, H., and G. Smith, (*See* Smith & Brown.) (Design.)			
	Brown, H., and G. Smith. (*See* Smith & Brown.) (Design.)			
47,923	Brown, H. C	Buffalo, N. Y	Stove-pipes, dampers for	May 30, 1865.
	Brown, Henry J., and Thomas Smith. (*See* Smith & Brown.)			
47,924	Brown, Hiram	Burton, Ohio	Washing machine	May 30, 1865.
	Brown, Isaac P. (*See* Zimmerman, Charles P., assignor.)			
45,695	Brown, Israel F	New London, Conn	Gins, cotton, roller for	Jan. 3, 1865.
49,077	Brown, I. O., A. Ingham, and F. T. Lomont	Massillon, Ohio	Reaping machines	Aug. 1, 1865.
50,553	Brown, Ira S., and Charles N	Westerly, R. I	Saws	Oct. 24, 1865.
	Brown, James B. (*See* Roth, Julius A., assignor.)			
	Brown, James B. (*See* Roth, Julius A., assignor.) (Reissue.)			
51,548	Brown, John	Utica, N. Y	Bolts, flour	Dec. 19, 1865.
51,549	Brown, John	Utica, N. Y	Mills, grinding for grain	Dec. 19, 1865.
	Brown, John, *et al.* (*See* Higgins, S. B., assignor.)			
48,049	Brown, John C., and G. H. Slimpert	Pinckneyville, Ill	Ploughs, gang	June 6, 1865.
	Brown, J. C., and S. M. Chesney. (*See* Chesney and Brown.)			
51,256	Brown, John E., assignor to self, Chas. A. Mott, and A. A. Peebles	Lansingburg, N. Y	Hames, harness	Nov. 28, 1865.
50,298	Brown, J. H., assignor to Alfred B. Ely	Boston, Mass	Pegger, hand	Oct. 3, 1865.
46,211	Brown, John M	Portland, Me	Tobacco stopper	Feb. 7, 1865.
2,071	Brown, Jonathan C	Brooklyn, N. Y	Splints, machines for cutting (Reissue)	Sept. 12, 1865.
46,521	Brown, Joseph R., assignor to "J. R. Brown and Sharpe"	Providence, R. I	Milling machine	Feb. 21, 1865.
51,257	Brown, Joseph R., assignor to "J. R. Brown and Sharpe"	Providence, R. I	Screw-cutting machines	Nov. 28, 1865.
50,444	Brown, Levi	Baltimore, Md	Banjo, guitar	Oct. 17, 1865.
	Brown, L. B., *et al.* (*See* Van Norman, Brown, and Morrison.)			
46,541	Brown, Marcus, and Oscar J. Shannon	Fond du Lac, Wis / Fairwater, Wis	Fence	Feb. 28, 1865.
46,212	Brown, Morgan W	New York, N. Y	Lamp chimneys, handles for. (Antedated January 28, 1865)	Feb. 7, 1865.
49,708	Brown, Morgan W	Morrisania, N. Y	Composition for enamel, paint, &c. (Antedated August 23, 1865)	Sept. 5, 1865.
46,445	Brown, Myron E	Buffalo, N. Y	Exhaust nozzles, variable	Feb. 21, 1865.
48,652	Brown, Oliver L	Manitowoc, Wis	Valves, governor	June 13, 1865.
1,875	Brown, Robert D	Covington, Ind	Grain binders, automatic (Reissue)	Feb. 21, 1865.
1,876	Brown, Robert D	Covington, Ind	Harvesters, raking attachments to (Reissue)	Feb. 21, 1865.
1,963	Brown, Robert D	Covington, Ind	Harvesters, raking attachments to	May 23, 1865.
48,363	Brown, Robert D	Covington, Ind	Harvesters, binding attachment to	June 27, 1865.
51,550	Brown, Robert D	Covington, Ind	Harvesters, rake attachment to	Dec. 19, 1865.
50,653	Brown, Thomas, jr., and Joseph L. Lowry, assignors to Thomas Brown, jr., and James McLain.	Pittsburg, Pa	Lantern guards	Oct. 24, 1865.
47,615	Brown, T. W	Cambridge, Mass	Ash-sifter	May 9, 1865.
51,775	Brown, William, assignor to M. G. and F. H. Jacobs	Morrison, Ill	Boiler, steam, method of preventing incrustation in	Dec. 26, 1865.
46,070	Brown, Wm. E	Boston, Mass	Coal-sifter, gravitating, portable	Jan. 31, 1865.
51,134	Brown, Wm. H	Worcester, Mass	Friction clutch	Nov. 28, 1865.
47,389	Browne, Daniel J., and Cyrus W. Baldwin	Boston, Mass	Galvanic batteries	Apr. 25, 1865.

50,554	Browne, John David	Cincinnati, Ohio	Broom-head	Oct. 24, 1865.
47,616	Brownell, F. C	East Orange, N. J	Ink wells. (Antedated April 24, 1865)	May 9, 1865.
50,899	Brownell, George	Mitchell, Ind	Claw-bar	Nov. 14, 1865.
51,670	Browning, Francis	England	Boiler, drainer, &c., clothes, combined	Dec. 19, 1865.
49,972	Bruce, Elgin K., and John M	Liberty, Pa	Coal mining machine	Sept. 19, 1865.
46,875	Brückner, William	San Francisco, Cal	Amalgam, process for refining	Mar. 21, 1865.
50,445	Bruen, John T	New York, N. Y	Journal-box	Oct. 17, 1865.
	Bruen Manufacturing Company. (*See* Sibley, John J., assignor.)			
	Bruen Manufacturing Company. (*See* Sibley, John J., assignor.)			
* 48,898	Brune, Maurice	New York, N. Y	Preserving food for transportation	July 25, 1865.
	Brurien, F., *et al.* (*See* Anton, Gustavus, assignor.) (Design.)			
48,899	Bryan, Charles H	Racine, Wis	Car-platform stake-holder	July 25, 1865.
	Bryan, J., *et al.* (*See* Parke, Thomas J., assignor.)			
47,514	Bryan, Joseph T	Lebanon, Ind	Planters, corn	May 2, 1865.
50,446	Bryan, Samuel	Jefferson, Wis	Fence, portable	Oct. 17, 1865.
46,876	Bryant, D. W	Chicago, Ill	Grain conveyors	Mar. 21, 1865.
1,999	Bryant, Joel	Brooklyn, N. Y	Shears (Reissue)	June 20, 1865.
49,852	Bryant, John L	Logansport, Ind	Floor clamps	Sept. 12, 1865.
47,894	Bryant, Wm. L., assignor to self, John B. Wheeler, and John R. Elvans.	Washington, D. C	Whiffletree irons	May 23, 1865.
51,011	Bryent, Walter	Boston, Mass	Burner, æro-vapor	Nov. 21, 1865.
50,331	Buchanan, Alexander	New York, N. Y	Valves, slide	Oct. 10, 1865.
45,696	Buchanan, Andrew	Brooklyn, N. Y	Car springs	Jan. 3, 1865.
48,258	Buchanan, Andrew	Brooklyn, N. Y	Boring and excavating coal, device for	June 20, 1865.
50,683	Buchanan, Andrew	Brooklyn, N. Y	Quartz crushers	Oct. 31, 1865.
51,012	Buchanan, Andrew	Brooklyn, N. Y	Sewing machines, device for controlling the motion of	Nov. 21, 1865.
51,013	Buchanan, John	Aurora, Ind	Broom-head	Nov. 21, 1865.
49,853	Buchanan, William	New York, N. Y	Piston packing	Sept. 12, 1865.
	Buchanan, Wm. C., and Theophilus Harrison. (*See* Harrison & Buchanan.)			
47,186	Buck, J. K	Winona, Minn	Mill fanning	Apr. 11, 1865.
49,704	Buckel George	Monroe, Mich	Cigar machine	Sept. 5, 1865.
47,087	Buckelew, Charles H	Jersey City, N. J	Lamp cone	Apr. 4, 1865.
47,515	Buckett, James	Harlem, N. Y	Photographic picture-holder	May 2, 1865.
48,127	Buckett, Joseph, assignor to self and L. W. Warner	New York, N. Y	Bread cutter	June 6, 1865.
49,370	Buckland, J. P	Holyoke, Mass	Sifting shovel	Aug. 15, 1865.
46,432	Buckland, Wm. Henry	England	Air, apparatus for carburetting. (Patented in England March 5, 1863.)	Feb. 14, 1865.
51,776	Buckley, Chauncey, assignor to Charles Parker	West Meriden, Conn	Spectacles, manufacture of lenses for	Dec. 26, 1865.
	Buckley, D. M., and A. P. Durant. (*See* Durant and Buckley.)			
47,698	Bucklin, E., jr	Pawtucket, R. I	Clothes-dryer	May 16, 1865.
	Bucklin, S. S., *et al.* (*See* Gray, Joshua, assignor.)			
	Bucklin, S. S., *et al.* (*See* Gray, Joshua, assignor.)			
	Buckman, Ira, jr., and Jeremiah Close. (*See* Close and Buckman.)			
	Buckman, Ira, jr., and Jeremiah Close. (*See* Close and Buckman.)			
47,678	Buckwater, Henry L., assignor to self, T. A. Buckwater, and E. Price.	Kimberton, Pa	Washing machine	May 9, 1865.
46,636	Budd, William, and J. L. Husband	Philadelphia, Pa	Barrels, oil, composition for lining	Mar. 7, 1865.
49,225	Budd, William, and J. L. Husband	Philadelphia, Pa	Bread and meat cutter	Aug. 8, 1865.
51,135	Budenbach, Peter	New York, N. Y	Lamps, head, locomotive	Nov. 28, 1865.
	Budenberg, C., and B. Schaffer. (*See* Prusmann, August, ass'r.)			
	Budenberg, C., and B. Schaffer. (*See* Prusmann, August, ass'r.)			

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Buell, J. Nelson. (*See* Wilson, Levi, assignor.)			
48,048	Buerk, Jacob E	Boston, Mass	Time detectors, watchman's	June 6, 1865.
	Buerk, Jacob E. (*See* Burk, John, assignor.) Reissue.			
	Buffum, Charles. (*See* Johnson, Joseph B., assignor.)			
49,973	Bugbee, Alpheus	Elkhart, Ind	Sowing plaster, machines for	Sept. 19, 1865.
50,065	Bugbee, Alpheus, assignor to self and Andrew J. Foster	Elkhart, Ind	Planters, seed	Sept. 19, 1865.
49,371	Bugbee, J. G	Bangor, Maine	Crutchfeet, revolving	Aug. 15, 1865.
	Bugbee, John G., and Geo. T. Allamby. (*See* Allamby & Bugbee.)			
	Bugbee, John G., and Geo. T. Allamby. (*See* Allamby & Bugbee.)			
49,078	Bugher, Aaron H	Cincinnati, Ohio	Fare boxes	Aug. 1, 1865.
49,079	Bugher, Aaron H	Cincinnati, Ohio	Fare boxes	Aug. 1, 1865.
49,080	Bugher, Aaron H	Cincinnati, Ohio	Fare boxes	Aug. 1, 1865.
	Bulkley, Charles A. (*See* Holt, Samuel, assignor.)			
51,647	Bull, Daniel, assignor to self and John B. Edoms	Amboy, Ill	Table leaf support	Dec. 19, 1865.
49,974	Bullard, Ransom	Litchfield, Mich	Sorghum evaparator	Sept. 19, 1865.
	Bullen, Sylvester. (*See* Clarke, G. E., assignor.)			
51,420	Bullene, John, jr	Chicago, Ill	Rein and back strapholder, combined. (Antedated Nov. 29, 1865.)	Dec. 12, 1865.
48,789	Bullock, Charles	Cambridge, Mass	Inhaling tubes	July 18, 1865.
	Bullock, Joseph P., and Gustavus Stone. (*See* Stone & Bullock.)			
48,480	Bullock, Smith W., ass'r to the Bullock Ore Dressing Machine Co.	Elizabeth, N. J	Amalgamating pan	June 27, 1865.
49,205	Bullot, C. O., assignor to Bullot & Co	Chili	Grain, machine for hulling	Aug. 1, 1865.
51,136	Bump, James H	Unadilla, N. Y	Wells, tubes and pumps for	Nov. 28, 1865.
45,971	Bunch, George, and James A. Price	Red River township Breckenridge, Mo	Planter, corn	Jan. 24, 1865.
48,653	Bundy, John	Irondequoit, N. Y	Carriages, coupling for	July 11, 1865.
49,337	Bundy, Nelson H., assignor to self and Nahum M. Dow	Boston, Mass	Gauges, calipers, and rules, connecting	Aug. 8, 1865.
47,617	Bunn, L. D	Morristown, N. J	Refrigerator	May 9, 1865.
47,925	Bunsen, George C	Belleville, Ill	Rock blasting	May 30, 1865.
51,690	Bunsen, George C	Belleville, Ill	Fire-arms, revolving	Dec. 26, 1865.
2,149	Bunting, Elizabeth V	Philadelphia, Pa	Lincoln, Abraham, bas-relief bust of (Design)	Aug. 1, 1865.
50,555	Burcaw, S. W	Allentown, Pa	Plate holder, focussing	Oct. 24, 1865.
46,857	Burchard, Anson	Livingstonville, N. Y	Flax, machine for pulling	Mar. 14, 1865.
49,854	Burchardt, Carl	New York, N. Y	Shoes, fastenings for	Sept. 12, 1865.
50,428	Burchardt, Maximilian	Prussia	Dentists, self-feeding plugging tool for	Oct. 10, 1865.
1,998	Burden, Henry	Troy, N. Y	Horseshoes, machine for making (Reissue)	June 13, 1865.
45,891	Burdick, A. R., assignor to self and J. D. Foster	Racine, Wis	Cars, railroad, stake holder for	Jan. 10, 1865.
49,372	Burdick, J. D	Ashaway, R. I	Washing machine	Aug. 15, 1865.
46,071	Burdon, George R	Waltham, Mass	Papers, adhesive fastening for	Jan. 31, 1865.
	Burgess, A., & Co. (*See* Innis, William J., assignor.)			
51,137	Burgess, Edwin	Racine, Wis	Suspenders	Nov. 28, 1865.
	Burgess, Hugh, and Morris L. Keen. (*See* Keen & Burgess.)			
	Burgess, M. H., and B. H. Bener. (*See* Bener & Burgess.)			
46,314	Burgy, Emanuel, and Louis Guillernin	Switzerland France	Threads, &c., machines for dressing and finishing	Feb. 7, 1865.
50,787	Burhyte, Tunis J	Fond du Lac, Wis	Platform and windlass, combined	Nov. 7, 1865

51,014	Burhyte, Tunis J	Fond du Lac, Wis	Ditching plough	Nov. 21, 1865.
2,054	Burk, John, assignor to Jacob E. Buerk	Boston, Mass	Time detectors, watchman's (Reissue)	Aug. 22, 1865.
46,327	Burke, Edward	Philadelphia, Pa	Washing machine	Feb. 14, 1865.
	Burke, Edward, and George L. Witsil. (*See* Witsil & Burke.)			
	Burke, Edward, and George L. Witsil. (*See* Witsil & Burke.)			
50,684	Burke, Thomas J., and S. B. Gassett	Chicago, Ill	Churns	Oct. 31, 1865.
47,926	Burkhart, William H	Bucyrus, Ohio	Harvesters	May 31, 1865.
49,081	Burlingame, M. E	Willett, N. Y	Fetter for animals	Aug. 1, 1865.
51,015	Burlingame, Rufus P., assignor to Helen G. Burlingame	Rochelle, Ill	Washing machine	Nov. 21, 1865.
50,900	Burnap, John A., and James H. Melick	Albany, N. Y	Shingle machines. (Antedated November 5, 1865)	Nov. 14, 1865.
2,209	Burnet, B. W., assignor to Henry R. Burnett	Madison, N. J	Collars and cuffs, paper, ornamenting (Design)	Oct. 24, 1865.
45,813	Burnet, William	New York, N. Y	File, paper	Jan. 10, 1865.
46,072	Burnet, William	New York, N. Y	File, newspaper	Jan. 31, 1865.
	Burnet, William H., and James Perkins. (*See* Perkins & Burnet.)			
45,814	Burnett, Bonajah J	Mount Vernon, N. Y	Ventilator	Jan. 10, 1865.
46,213	Burnett, Bonajah J	Mount Vernon, N. Y	Cranes	Feb. 7, 1865.
49,373	Burnett, Bonajah J	Mount Vernon, N. Y	Ventilator for houses	Aug. 15, 1865.
49,374	Burnett, Bonajah J	Mount Vernon, N. Y	Ventilator for ships, &c	Aug. 15, 1865.
50,794	Burnett, Bonajah J	Mount Vernon, N. Y	Ventilator	Nov. 7, 1865.
49,710	Burnett, Robert T	New York, N. Y	Levels, spirit	Sept. 5, 1865.
49,711	Burnham, Asahel	Arkwright, N. Y	Can, milk, bottom	Sept. 5, 1865.
	Burnham, A. G., and William Platt. (*See* Platt & Burnham.)			
50,447	Burnham, Charles	Philadelphia, Pa	Sifter, flour	Oct. 17, 1865.
	Burnham, Gridley, and Charles H. Parker. (*See* Parker & Burnham.)			
	Burnham, Gridley, and Charles H. Parker. (*See* Parker & Burnham.)			
	Burnham, John P., and George W. Adams. (*See* Adams & Burnham.)			
51,422	Burnham, O. R	New York, N. Y	Bungs	Dec. 12, 1865.
47,487	Burnham, Oliver R., assignor to J. I. and J. O. West	New York, N. Y	Braiding machines for covering skirt and otherwise	Apr. 25, 1865.
51,138	Burns, James	Titusville, Pa	Wells, oil and other, drill and reamer for	Nov. 28, 1865.
46,073	Burns, John H	Clinton, Station, N. J	Pumps	Jan. 31, 1865.
48,654	Burns, Robert	New York, N. Y	Planters, corn	July 11, 1865.
48,655	Burns, Robert	New York, N. Y	Seeding machines	July 11, 1865.
47,253	Burns, Thomas	Williamsburg, N. Y	Barrel packer	Apr. 11, 1865.
	Burnside Rifle Company. (*See* Hughes, G. W., ass'r.) (Reissue.)			
	Burnside Rifle Company. (*See* Hughes & Pusey, assignors.)			
	Burr, David A. (*See* Lamont, Charles, assignor.)			
	Burr, David A. (*See* Lamont, Charles, assignor.)			
47,353	Burr, Theodore, assignor to self and Smith M. Kellogg	Battle Creek, Mich	Legs, artificial	Apr. 18, 1865.
2,083	Burrall, Thomas D	Geneva, N. Y	Corn shellers (Reissue)	Oct. 10, 1865.
46,775	Burrell, David T	Bridgewater, Mass	Lamp for heating curling irons, &c	Mar. 14, 1865.
46,177	Burridge, W. H., assignor to Adams, Jewett & Co	Cleveland, Ohio	Fruit basket	Jan. 31, 1865.
1,845	Burrill, jr., assignor, through mesne assignments, to E. H. Ashcroft, J. A. Johnson, and A. S. Moore.	Lynn, Mass	Leather treating (Reissue)	Jan. 3, 1865.
49,375	Burris, Tobias	Fieldon, Ill	Beehives	Aug. 15, 1865.
48,259	Burritt, S. B	New York, N. Y	Lathe chuck	June 20, 1865.
50,556	Burrows, William	New York, N. Y	Stamp, hand and embossing press	Oct. 24, 1865.
49,226	Burson, James	Yates City, Ill	Paddle-wheel, feathering	Aug. 8, 1865.
48,900	Burson, W. W	Rockford, Ill	Grain binders	July 25, 1865.
46,776	Burt, George J	Haward, Mass	Rakes, horse	Mar. 14, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
50,557	Burt, George J	Harvard, Mass	Rakes, horse	Oct. 24, 1865.
49,082	Burt, Wm. L	Boston, Mass	Car brakes	Aug. 1, 1865.
51,551	Burtis, T. B	Chicago, Ill	Mills, grinding	Dec. 19, 1865.
45,907	Burtnett, Wm. B., and James P. McIntosh	New York, N. Y Brooklyn, N. Y	Brush, whitewash	Jan. 17, 1865.
47,927	Burtnett, Wm. B., and James P. McIntosh	New York, N. Y Brooklyn, N. Y	Brush, whitewash, and handle attachment	May 30, 1865.
50,449	Burtnett, Wm. B., and James P. McIntosh	New York, N. Y Highland Mills, N. Y	Brushes, whitewash, device for attaching handles to	Oct. 17, 1865.
46,446	Burton, Church	Union, Me	Tanning	Feb. 21, 1865.
	Burton, S. H., & Co. (*See* Clarke, James G., assignor.) Design.			
	Burton, S. H., & Co. (*See* Clarke, James G., assignor.)			
59,093	Burton, William J	Turtle, Wis	Cultivators	Sept. 26, 1865.
47,279	Buschmann, Victor H	Baltimore, Md	Sewing machines. (Antedated April 17, 1865)	Apr. 18, 1865.
47,187	Buser, Jacob	Philadelphia, Pa	Saw-set	Apr. 11. 1865.
49,825	Buser, John, assignor to Heinemann & Silbermann	New York, N. Y	Cords, machines for covering	Sept. 5, 1865.
49,713	Bush, Clark T	Rensselaerville, N. Y	Harvesters, guard fingers for	Sept. 5, 1865.
	Bush, R. G., and M. Harris. (*See* Harris & Bush.)			
	Bush, R. G., and M. Harris. (*See* Harris & Bush.)			
	Buss, Ezra, and James Hotchkiss. (*See* Hotchkiss & Buss.)			
45,697	Busser, Jacob	Philadelphia, Pa	Propeller	Jan. 3. 1865.
51,292	Bussey, Esek	Troy, N. Y	Stoves, cooking	Dec. 5, 1865.
49,712	Bussey, William C	Jackson, Cal	Lock	Sept. 5, 1865.
	Butcher, R. H., *et al.* (*See* Minter, James, assignor.)			
51,648	Butler, Calvin L., assignor to J. Russell Manufacturing Company	Greenfield, Mass	Cutlery	Dec. 19, 1865.
48,050	Butler, D. P	Boston, Mass	Weight-lifting apparatus	June 6, 1865.
48,051	Butler, D. P	Boston, Mass	Weight-pulling apparatus	June 6, 1865.
48,514	Butler, D. P	Boston, Mass	Bells, dumb	July 4, 1865.
47,390	Butler, James D	North Adams, Mass	Drills, rock, engine for operating	Apr. 25, 1865.
	Butler, Richard. (*See* Shepard, Josiah, assignor.)			
49,975	Butler, W. H	Chicago, Ill	Amalgamating apparatus	Sept. 19, 1865.
51,552	Butler, William M	San Francisco, Cal	Dental chairs, spittoons for	Dec. 19, 1865.
51,553	Butler, William M	San Francisco, Cal	Dental chairs	Dec. 19, 1865.
	Butterfield & Haven. (*See* Partridge, Allen, assignor.)			
49,498	Butters, James M	Lovel, Me	Clothes dryer	Aug. 22, 1865.
49,714	Butterworth, Robert	Trenton, N. J	Apples, machines for grinding	Sept. 5, 1865.
	Button, Charles P. (*See* Goodman, Joseph, assignor.)			
	Button, Charles P. (*See* Charlesworth, Edward, assignor.)			
50,985	Button, Jesse, assignor to self and Richard F. Hawkins	Springfield, Mass	Drilling machine	Nov. 7, 1865.
47,188	Busby, Jacob	Philadelphia, Pa	Boilers, composition for removing scale from	Apr. 11, 1865.
47,794	Busby, Jacob	Philadelphia, Pa	Boilers, steam, preventing and removing scale in	May 23, 1865.
50,094	Byrkit, Jesse	Fairfield, Iowa	Spinning machines, hand	Sept. 26, 1865.
51,139	Byron, Marcus L	New York, N. Y	Coal scuttle	Nov. 28, 1865.
51,423	Byron, Marcus L	New York, N. Y	Broom and brush	Dec. 12, 1865.
50,085	Byrne, Thomas	New York, N. Y	Preserving beer and other liquids, apparatus for	Sept. 19, 1865.

47,516	Byrne, Thomas, and Thomas Henry	New York, N. Y	Hats, machine for printing	May 2, 1865.
50,986	Byrne, Thomas, assignor to self and Samuel S. Smoot	New York, N. Y	Well, deep, elevators	Nov. 14, 1865.
51,140	Byrne, Thomas	New York, N. Y	Rafts, cotton-bale	Nov. 28, 1865.
51,016	Byrnes, L	Boston, Mass	Croquet mallets	Nov. 21, 1865.
51,691	Byrnes, Thomas R	Washington, D. C	Fence	Dec. 26, 1865.
45,972	Cadwell, Caleb	Waukegan, Ill	Sewing machines	Jan. 24, 1865.
2,042	Cadwell, Caleb	Waukegan, Ill	Sewing machines (Design)	Apr. 11, 1865.
49,083	Cadwell, J. R.	Dexter, Mich	Hay forks, horse	Aug. 1, 1865.
46,877	Cadwell, Marvin S. and J. R	Dexter, Mich	Seeding machine	Mar. 21, 1865.
	Cady, Ira L	New York, N. Y	Vaults, safes, &c., compound metallic doors for (Extension)	Apr. 24, 1865.
47,517	Cady, John	Staffordsville, Ct	Looms, picker motion for	May 2, 1865.
	Caffon, Wm., *et al.* (*See* Baschan, Bindtner & Caffon.)			
46,214	Cahoon, Charles W	Portland, Me	Bottle for oil	Feb. 7, 1865.
47,254	Cahoon, Charles W	Portland, Me	Wick scraper	Apr. 11, 1865.
51,141	Cahoon, Charles W	Portland, Me	Bottle	Nov. 28, 1865.
51,142	Cahoon, Charles W	Portland, Me	Bottle	Nov. 28, 1865.
45,973	Cain, Ansel	Holyoke, Mass	Ship's pumps, means for working	Jan. 24, 1865.
48,052	Cain, John, and A. B	Dubuque, Iowa	Laster, shank	June 6, 1865.
	Cain, Wm., jr., *et al.* (*See* Veregge, Henry W., assignor.)			
51,692	Cain, W. P	Moravia, Iowa	Tuyere	Dec. 26, 1865.
50,299	Cajar, Emil, assignor to self and John H. Thieling	New York, N. Y	Sewing machines, button-hole	Oct. 3, 1865.
46,447	Calderwood, Ezra	Portland, Me	Rakes, hay, revolving	Feb. 21, 1865.
48,364	Calderwood, Ezra	Portland, Me	Whiffletrees, attaching traces to	June 27, 1865.
49,469	Caldwell, Elijah, jr., assignor to self and A. M. Lesley	New York, N. Y	Stoves, gas	Aug. 15, 1865.
49,499	Caldwell, John, sr	Chillicothe, Ohio	Vegetable cutter	Aug. 22, 1865.
49,715	Calkins, George	El Paso, Ill	Cultivators	Sept. 5, 1865.
50,558	Calkins, James, and J. Fraser	Buffalo, N. Y	Well packing	Oct. 24, 1865.
	Calkins, James, and J. Fraser. (*See* Fraser & Calkins.)			
48,790	Calkins, Jerome	Hudson, Mich	Harness	July 18, 1865.
	Calkins, W. C. (*See* Lee, Joel, and Henry R., assignors.)			
49,855	Callan, Thomas	Philadelphia, Pa	Condensers	Sept. 12, 1865.
48,128	Callender, Mills L., assignor to the Callender Lamp Manufacturing Company.	New York, N. Y	Lamps	June 6, 1865.
48,365	Caller, James M	Salem, Mass	Treating tan bark, method of	June 27, 1865.
49,227	Calthorp, Samuel R.	Roxbury, Mass	Trains and cars, construction of	Aug. 8, 1865.
49,716	Camack, James	Dane, Wis	Pumps	Sept. 5, 1865.
48,901	Cameron, A. S	New York, N. Y	Valves, slide, balanced	July 25, 1865.
50,218	Cameron, Adam S	New York, N. Y	Engine, steam, valve gear for	Oct. 3, 1865.
47,928	Cameron, Samuel	Pittsburg, Pa	Spike machines, dies for. (Antedated May 17, 1865)	May 30, 1865.
45,698	Camp, Herman	San Francisco, Cal	Quartz crusher	Jan. 3, 1865.
	Campbell, Albert B. (*See* Hardick, Charles B. and John, assignors.)			
51,105	Campbell, H. D., assignor to David L. Plume	Newark, N. J	Saws scroll	Nov. 21, 1865.
48,014	Campbell, Daniel, and Henry Seymour	Elizabeth, N. J	Bread, meats, &c., cutter for	May 30, 1865.
50,332	Campbell, Edward A.	Williams's Bridge, N. Y	Supporter, sash	Oct. 10, 1865.
	Campbell, George G. (*See* Locke, Sylvanus D., assignor.)			
	Campbell, George G. (*See* Phelps, C. C., assignor.)			
50,559	Campbell, George G.	Janesville, Wis	Car coupling	Oct. 24, 1865.
	Campbell, J. W., *et al.* (*See* Pratt, Ira C., assignor.)			
51,143	Campbell, Luther W	Aurora, Ill	Stove, cook	Nov. 28, 1865.
48,515	Campbell, Malcolm, and John H. Cole	Philadelphia, Pa	Wells, &c., machines for boring	July 4, 1865.
47,391	Campbell, M. C	Philadelphia, Pa	Skating pond, artificial	Apr. 25, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Campbell, R. E. (*See* Tripp, Thomas, assignor.) Reissue.			
47,700	Canda, Ferdinand E	Chicago, Ill	Car brakes, railroad	May 16, 1865.
47,795	Canning, William	New York, N. Y.	Evaporator	May 23, 1865.
50,560	Capewell, John B	Gloucester, N. J	Lamps, wind-guard and air-heater for	Oct. 24, 1865.
50,795	Capewell, John B	Gloucester, N. J	Caster wheels, glass	Nov. 7, 1865.
49,376	Capron, E. P. H	Springfield, Ohio	Brick machine	Aug. 15, 1865.
47,354	Carcy, A. C., assignor to Samuel A. Bradbury	Malden, Mass	Knitting machines	Apr. 18, 1865.
47,488	Carey, Augustus C., assignor to self and George S. Sullivan	Lynn, Mass	Knitting machine needles	Apr. 25, 1865.
	Carey, Henry C., *et al.* (*See* Moxey, J. G., assignor.)			
51,554	Carey, Wilson W	Lowell, Mass	Lathes for wood turning	Dec. 19, 1865.
48,902	Carhart, J. Wesley	Cohoes, N. Y	Engines, steam, valves for	July 25, 1865.
47,618	Carhart, Peter S	Collamer, N. Y	Cultivators	May 9, 1865.
50,685	Carling, A. F., and L. Rockwell	Ellenville, N. Y	Coal-scuttle and ash-screen combined	Oct. 31, 1865.
	Carlise, David. (*See* Hamilton, William, assignor.)			
46,542	Carpenter, Charles E	Providence, R. I	Alarms, fire, signal-boxes for	Feb. 28, 1865.
	Carpenter, Erastus P. (*See* West, Hiram E., assignor.)			
45,699	Carpenter, Lewis R	Lancaster, Ohio	Wagon and carriage brakes. (Antedated August 19, 1862.)	Jan. 3, 1865.
	Carpenter, Oliver. (*See* West, Hiram E., assignor.)			
48,366	Carpenter, R. W	New York, N. Y	Tremolo attachment	June 27, 1865.
46,074	Carpenter, Stephen Decatur	Madison, Wis	Boats, gun, construction of	Jan. 31, 1865.
47,796	Carpenter, Stephen Decatur	Madison, Wis	Ships' defensive armor	May 23, 1865.
47,929	Carr, Jackson R	Ellenville, N. Y	Wells, grapnel for	May 30, 1865.
50,901	Carr, R. Wilson	Baltimore, Md	Hair restorative	Nov. 14, 1865.
50,883	Carré, François	France	Bed bottom. (Patented in France July 4, 1862.)	Nov. 7, 1865.
48,903	Carroll, John	Longacoming, N. J	Furnaces, glass	July 25, 1865.
2,182	Carroll, N	Philadelphia, Pa	Sun-dial (Design)	Oct. 10, 1865.
47,518	Carter, Cyrus C	Exeter, Ill	Seeding machine	May 2, 1865.
47,250	Carter, George	England	Shears	Apr. 11, 1865.
	Carter, Henry, deceased, by Robert Crichton and James Rees, administrators, and James Rees.	Pittsburg, Pa	Nut and washer machine (Extension)	Aug. 14, 1865.
48,904	Carter, Henry T	Portland, Maine	Engines, oscillating, valve gear for	July 25, 1865.
46,075	Carter, Jonathan	Winchendon, Mass	Painting pails, tool for	Jan. 31, 1865.
49,500	Carter, Rufus, jr	Lawrence, Mass	Table or bench, folding	Aug. 22, 1865.
50,561	Cartisser, Joseph	New York, N. Y	Porcelain or pottery to receive designs, &c., method of preparing	Oct. 24, 1865.
48,707	Carver, Aaron	Little Falls, N. Y	Pumps	July 11, 1865.
47,519	Carver, P. S	Honeoye Falls, N. Y	Rakes, horse	May 2, 1865.
	Cary, Pierre H., and Auguste Masson. (*See* Masson & Cary.)			
50,902	Casamajor, Paul	New York, N. Y	Wells, oil, mode of operating	Nov. 14, 1865.
50,903	Casamajor, Paul	New York, N. Y	Wells, oil, mode of operating	Nov. 14, 1865.
51,555	Case, A. Y	Dexter, Mich	Hay forks, horse	Dec. 19, 1865.
49,717	Case, George F	Brooklyn, N. Y	Well boring, expanding drills for	Sept. 5, 1865.
	Case, Marsh & Co. (*See* Wiggins, Charles P., assignor.)			
	Case, Marsh & Wiggins. (*See* Wiggins, Charles P., assignor.)			
	Case, O. F. (*See* Coburn, John W., assignor.)			
49,976	Case, William J. and Rhutson	Pittstown, N. J	Harvester rakes	Sept. 19, 1865.

47,701	Casey, Joseph	Washington, D. C	Petroleum, device for heating and conveying	May 16, 1865.
45,700	Cass, A. B	Chicago, Ill	Cultivators	Jan. 3, 1865.
	Cassel, M. P., and G. Ekstrand. (*See* Ekstrand & Cassel.)			
	Castle, Orlando Lane	Upper Alton, Ill	Broom heads, metallic (Disclaimer)	Feb. 9, 1865.
48,905	Caswell, William F	Raynham, Mass	Traps, animal	July 25, 1865.
51,017	Cate, Stephen M	Waterbury, Conn	Metal, sheet, tubings, forming	Nov. 21, 1865.
46,215	Catlin, H. W	Burlington, Vt	Whip-socket fastenings	Feb. 7, 1865.
48,906	Cauvet, Louis A	New York, N. Y	Telegraph wires, insulators for	July 25, 1865.
50,904	Caywood, Abram and George W	Ithaca, Ohio	Boot-crimp	Nov. 14, 1865.
47,163	Chabot, Cyprien	Philadelphia, Pa	Fire-arms, breech-loading	Apr. 4, 1865.
49,718	Chabot, Cyprien	Philadelphia, Pa	Fire-arms, breech-loading	Sept. 5, 1865.
51,018	Chadwick, J. H	Boston, Mass	White lead, pots for the manufacture of	Nov. 21, 1865.
49,228	Challoner, George	Omro, Wis	Shingle machines	Aug. 8, 1865.
46,076	Chamberlain, D. H	West Roxbury, Mass	Stamp, hand, for printing	Jan. 31, 1865.
49,084	Chamberlain, Dexter H	West Roxbury, Mass	Stamp, hand	Aug. 1, 1865.
48,260	Chamberlain, Elijah R	Sharonville, Ohio	Ram, torpedo. (Antedated June 10, 1865)	June 20, 1865.
	Chamberlin, E. C., *et al.* (*See* Powers, Timothy J., assignor.)			
48,516	Chambers, Charles F	Hutsonville, Ill	Pans, sheet-metal, machine for making	July 4, 1865.
45,974	Chambers, Cyrus, jr	Philadelphia, Pa	Brick machines, duster for	Jan. 24, 1865.
48,517	Chambers, James	Boston, Mass	Pipe coupling	July 4, 1865.
	Champion, Joel D. (*See* Abbott, Samuel K., assignor.)			
45,975	Champlin, J. H	Essex, Conn	Car brakes, railroad	Jan. 24, 1865.
49,229	Champlin, John	East Middlebury, Vt	Washing machine	Aug. 8, 1865.
49,501	Chandler, Hewett	New Gloucester, Maine	Harvesting machines	Aug. 22, 1865.
48,616	Chandler, M. and J. W., assignors to selves and A. and W. R. Woodard.	East Corinth, Maine	Cultivator and potato-digger combined	July 4, 1865.
	Chandler, William M., *et al.* (*See* Tyler, Chandler & Standish.)			
48,656	Chaney, Samuel E	Hillsboro', Ohio	Car coupling	July 11, 1865.
46,878	Channing, William F	Providence, R. I	Railways, marine	Mar. 21, 1865.
	Chapin, Almond T. (*See* Ogborn, Harrison, assignor.)			
46,879	Chapin, Solomon	Cincinnati, Ohio	Bed and crib, sofa	Mar. 21, 1865.
	Chapin, S. P., and B. W. Robinson. (*See* Hall, A. W., assignor.)			
49,719	Chapman, F. J	Huron, Ind	Soda fountains	Sept. 5, 1865.
51,293	Chapman, Henry	Catawissa, Pa	Paper machinery	Dec. 5, 1865.
	Chapman, Henry, and Lester Day. (*See* Day & Chapman.)			
49,856	Chapman, Jasper	Linn county, Iowa	Cultivators, corn	Sept. 12, 1865.
46,535	Chapman, John	England	Diseases, means of applying heat and cold in the treatment of	Feb. 21, 1865.
	Chapman, John C. and Daniel C. Stillson. (*See* Stillson & Chapman.)			
	Chapman, Joseph. (*See* Vallo, Signor, assignor.)			
46,216	Chappell, Norman	East Avon, N. Y	Harvesters, bean	Feb. 7, 1865.
49,603	Chappell, N. L	New York, N. Y	Water ejectors	Aug. 29, 1865.
49,977	Chappell, Richard W	Chicago, Ill	Compound, washing	Sept. 19, 1865.
50,312	Charlesworth, Edward, assignor to Charles P. Button	England	Arms, small, handle attachment to	Oct. 3, 1865.
49,675	Chase, Aaron, jr., assignor to self and Timothy How	Somerville, Mass	Inclinometers	Aug. 29, 1865.
47,392	Chase, James, and William S. Loughborough	Rochester, N. Y	Curtain fixture. (Antedated April 15, 1865)	Apr. 25, 1865.
50,905	Chase, John	Windsor Locks, Conn	Air, apparatus for carburetting	Nov. 14, 1865.
50,987	Chase, John, assignor to S. E. Horton	Windsor Locks, Conn	Air, apparatus for carburetting	Nov. 14, 1865.
48,153	Chase, L. C	Boston, Mass	Buckles, &c., method of attaching loops to	June 13, 1865.
45,976	Chase, Otis N	Boston, Mass	Planter, seed and potato, combined. (Antedated January 8, 1865)	Jan. 24, 1865.
47,797	Chase, P. G	Berlin, Wis	Bed bottom	May 23, 1865.
50,450	Chase Samuel G	Raymertown, N. Y	Wool, fleeces of, machine for putting up	Oct. 17, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
51,019	Chase, Theodore L	Philadelphia, Pa	Press, portable	Nov. 21, 1865.
51,556	Chase, William K	Charlestown, Mass	Clocks, calendar	Dec. 19, 1865.
	Chatterton, George. (*See* Mayor, Thomas, assignor.)			
	Chatterton, George. (*See* Mayor, Thomas, assignor.)			
49,056	Chavanne, André	France	Mail bags to and from railroad trains and stations, apparatus for receiving and delivering.	July 25, 1865.
	Chesebrough, Robert. (*See* Warren, J. T., assignor.)			
51,557	Chesebrough, Robert A	New York, N. Y	Petroleum by filtration, refining	Dec. 19, 1865.
51,558	Chesebrough, Robert A	New York, N. Y	Petroleum by filtration, refining	Dec. 19, 1865.
48,367	Chesebrough, Robert A	New York, N. Y	Petroleum, process for distilling	June 27, 1865.
49,230	Chesebrough, Robert A	New York, N. Y	Filtering petroleum, apparatus for	Aug. 8, 1865.
49,502	Chesebrough, Robert A	New York, N. Y	Process for purifying coal-oil, &c	Aug. 22, 1865.
	Chesebrough, Robert A. (*See* Warren, J. T., assignor.)			
	Chesebrough, Robert A. (*See* Warren, J. T., assignor.)			
	Chesley, Plumer H., and George W. Sargent. (*See* Sargent & Chesley.)			
46,077	Chesley, William	Cincinnati, Ohio	Cocks, valve	Jan. 31, 1865.
50,219	Chesley, William	Cincinnati, Ohio	Valves, globe	Oct. 3, 1865.
2,025	Chesney, S. M., and J. C. Brown, assignors through mesne assignments to J. Washburn and P. L. Moen.	Worcester, Mass	Skirt wire, apparatus for sizing and finishing (Reissue)	July 4, 1865.
46,637	Chesney, W. E	Abington, Ill	Planter, corn	Mar. 7, 1865.
50,416	Chesnut, Samuel, assignor to self and Thomas Jones	Philadelphia, Pa	Spade steps, cutting and punching	Oct. 10, 1865.
51,144	Chester, Charles T	Hackensack Township, N.J.	Batteries, carbon, connectors for	Nov. 28, 1865.
48,368	Chesterman, Edwin	Roxbury, Mass	Boots and shoes	June 27, 1865.
49,085	Chevallier, Charles	Brooklyn, N. Y	Bolt, door	Aug. 1, 1865.
46,777	Cheyney, Waldron J., and E. T. Dieteriehs	Wallingford, Pa Philadelphia, Pa	Coal dust, peat, &c., method of consolidating	Mar. 14, 1865.
47,596	Chichester, Lewis S., assignor to self and Clark W. Mills	Brooklyn, N. Y	Dryer, grain. (Antedated April 15, 1865)	May 2, 1865.
49,470	Chichester, Lewis S., assignor to self and Clark W. Mills	Brooklyn, N. Y	Dryer, grain	Aug. 15, 1865.
	Chichester, L. S., *et al.* (*See* Taggart, Chichester & Mills.)			
	Chickering, Jacob. (*See* Bean, Edwin E., assignor.)			
45,908	Chilcott, John	Brooklyn, N. Y	Gas or other retorts. (Antedated January 6, 1865)	Jan. 17, 1865.
47,393	Chilcott, John	Brooklyn, N. Y	Extracts from vegetables, &c., apparatus for obtaining. (Antedated April 20, 1865.)	Apr. 25, 1865.
47,394	Chilcott, John	Brooklyn, N. Y	Distillation, process for preparing grain for. (Antedated April 15, 1865.)	Apr. 25, 1865.
47,930	Chilcott, John	Brooklyn, N. Y	Boot and shoe soles. (Antedated May 19, 1865)	May 30, 1865.
47,931	Chilcott, John	Brooklyn, N. Y	Mash tun. (Antedated May 16, 1865)	May 30, 1865.
48,518	Chilcott, John	Brooklyn, N. Y	Steam generators, cast-iron. (Antedated June 21, 1865)	July 4, 1865.
49,231	Chilcott, John	Brooklyn, N. Y	Gas retorts, mode of constructing the heads, necks, and connections of. (Antedated July 24, 1865.)	Aug. 8, 1865.
49,503	Chilcott, John	Brooklyn, N. Y	Oven for cooking. (Antedated August 11, 1865)	Aug. 22, 1865.
49,504	Chilcott, John	Brooklyn, N. Y	Heaters. (Antedated August 15, 1865.)	Aug. 22, 1865.
50,220	Chilcott, John	Brooklyn, N. Y	Luting, loam, method of revivifying. (Antedated September 22, 1865.)	Oct. 3, 1865.

50,221	Chilcott, John	Brooklyn, N. Y	Boilers, steam, setting. (Antedated September 18, 1865)	Oct. 3, 1865.
50,451	Chilcott, John	Brooklyn, N. Y	Sewing machines. (Antedated October 4, 1865)	Oct. 17, 1865.
2,000	Chilcott, John	Brooklyn, N. Y	Gas and other retorts (Reissue)	June 20, 1865.
	Childs, A. B. (*See* Leggett & Gittus, assignors.)			
	Childs, E. L. (*See* Thompson, M. L., assignor.)			
	Child, J. C., *et al.* (*See* Cochrane, William F., assignor.)			
	Child, J. C., *et al.* (*See* Cochrane, William F., assignor.)			
2,150	Chilson, Gardner	Boston, Mass	Stove (Design)	Aug. 1, 1865.
51,424	Chilson, Gardner	Boston, Mass	Stove, coal	Dec. 12, 1865.
50,452	Chinnock, Charles	Brooklyn, N. Y	Dancer, automatic. (Antedated October 4, 1865)	Oct. 17, 1865.
	Chinnock, Charles, and Henry Pennie. (*See* Pennie & Chinnock.)			
46,880	Chipman, Edgar	New York, N. Y	Churns	Mar. 21, 1865.
47,798	Chittenden, Anning S	Bergen county, N. J	Ticket for railroads, &c., identifying	May 23, 1865.
45,977	Chittenden, Lucius E	Washington, D. C	Buttons, handles for knives and for other purposes, material for the manufacture of.	Jan. 24, 1865.
50,333	Chittenden, Morgan	Danbury, Conn	Brick, machine for pressing. (Antedated September 25, 1865)	Oct. 10, 1865.
50,417	Choate, William, assignor to self, William Teel, J. Whitmore, and O. W. Clark.	Newburyport, Mass	Paddle wheel	Oct. 10, 1865.
48,791	Chollar, Justus, and Chas. W. Cunningham	Washington, D. C	Beer and other liquids, cooler for	July 18, 1865.
	Chollet, Pierre E., and Antoine Choplain. (*See* Choplain & Chollet.)			
51,559	Choplain, Antoine, and Pierre E. Chollet	New York, N. Y	Pianos, stringing	Dec. 19, 1865.
2,235	Christisenssen, William	New York, N. Y	Group of statues, masonic (Design)	Dec. 26, 1865.
50,095	Christian, Hibbard	New York, N. Y	Curling irons	Sept. 26, 1865.
51,145	Christman, John	Syracuse, N. Y	Pump filters	Nov. 28, 1865.
49,948	Christy, James, assignor to self, R. Dirks, and E. H. Zitzman	Philadelphia, Pa	Brake shoe	Sept. 12, 1865.
51,020	Chrysler, Warren	Lockport, N. Y	Jars, fruit, stoppers for	Nov. 21, 1865.
49,232	Chubb, Thomas J	Brooklyn, N. Y	Amalgamator	Aug. 8, 1865.
	Church, A., *et al.* (*See* Bidwell, J. A., assignor.)			
	Church, Wm. (*See* Riggs, Homer, assignor.)			
49,377	Churchill, Benjamin	Wareham, Mass	Weighing apparatus	Aug. 15, 1865.
50,453	Churchill, Daniel, and S. C. Brewer	Ionia, Ill	Cultivators	Oct. 17, 1865.
49,378	Churchill, J. W	Pittston, Pa	Traps, animal	Aug. 15, 1865.
2,216	Cinquini, Pietro, assignor to John E. Parker and H. J. P. Whipple	Meriden, Conn	Drawer pull (Design)	Nov. 7, 1865.
	Cisco, L. D., and Geo. W. Heald. (*See* Heald and Cisco.)			
49,978	Clackner, Andrew S	Rochester, N. Y	Watch main springs, implement for contracting the barrels of	Sept. 19, 1865.
47,395	Claflen, H. M	Cleveland, Ohio	Timbers, mode of splicing	Apr. 25, 1865.
47,520	Clapp, E. D	Auburn, N. Y	Thills, coupling for	May 2, 1865.
46,638	Clapp, M. R	New York, N. Y	Pumps	Mar. 7, 1865.
46,295	Clark, Anthony, assignor to self and Gorham Blake	Todd's Valley, Cal	Pipe for mining, flexible	Feb. 7, 1865.
50,454	Clark, Arnold B	Delavan, Wis	Washing machine	Oct. 17, 1865.
51,693	Clark, Augustus	Amsterdam, N. Y	Coffin handles	Dec. 26, 1865.
49,979	Clark, Benjamin	New York, N. Y	Oil cans	Sept. 19, 1865.
51,694	Clark, Charles H	Wilmington, Del	Press, parallel or other	Dec. 26, 1865.
46,335	Clark, Daniel, and Thomas Stephenson	Buffalo, N. Y	Melodeons, mode of operating the swell of	Feb. 14, 1865.
2,103	Clark, Daniel A	Pawtucket, R. I	Coffin studs (Design)	June 27, 1865.
49,379	Clark, David	Hazleton, Pa	Piston packing	Aug. 15, 1865.
	Clark, E. H., *et al.* (*See* Judson, Alonzo R., assignor.)			
	Clark, E. W., *et al.* (*See* Higley, Peter R., assignor.)			
45,701	Clark, Francis	Auburn, Mass	Fire-arms, breech-loading	Jan. 3, 1865.
51,695	Clark, G. E	Racine, Wis	Car coupling	Dec. 26, 1865.
	Clark, Geo. H., and John T. (*See* Beach, E. B., assignor.)			

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,521	Clark, Geo. P	Brooklyn, N. Y	Boots and shoes	May 2, 1865.
	Clark, Henry A. (*See* Griswold, Henry J., assignor.)			
46,543	Clark, James B	Plantsville, Conn	Tags, apparatus for making	Feb. 28, 1865.
46,639	Clark, James J	New York, N. Y	Telegraphs, receiving magnets for	Mar. 7, 1865.
49,857	Clark, James J., and Henry Splitdorf	New York, N. Y	Magnets, sounder	Sept. 12, 1865.
46,881	Clark, J. K. and C. B	Mount Pleasant, Iowa	Fence	Mar. 21, 1865.
	Clark, James R., and Charles A. Shaw. (*See* Shaw & Clark.)			
51,146	Clark, John F	Baltimore, Md	Suspender pockets	Nov. 28, 1865.
47,799	Clark, John M	Dayton, Ohio	Broom	May 23, 1865.
49,380	Clark, John M	United States army	Water wheels	Aug. 15, 1865.
50,796	Clark, John W	Manchester, Wis	Car axle	Nov. 7, 1865.
51,696	Clark, Joseph H	Westbrook, Maine	Cars, railway, swing-jack for	Dec. 26, 1865.
49,720	Clark, Morell	Castalia, Iowa	Seeding machines	Sept. 5, 1865.
46,640	Clark, Moses M	Monroe, N. Y	Milk, case for preserving and transporting	Mar. 7, 1865.
46,641	Clark, N. D	Bentonsport, Iowa	Gold washer. (Antedated March 3, 1865)	Mar. 7, 1865.
49,604	Clark, Nelson W	Detroit, Mich	Building for preserving milk, fruit, &c	Aug. 29, 1865.
	Clark, O. W., *et al.* (*See* Choate, William, assignor.)			
50,096	Clarke, Selah H	Philadelphia, Pa	Skate	Sept. 26, 1865.
49,858	Clark, Thomas	Cohoes, N. Y	Engines, steam, valves for	Sept. 12, 1865.
47,619	Clark, Thomas H	St. Louis, Mo	Furnaces, boiler	May 9, 1865.
48,617	Clark, Wm. C., assignor to self, W. D. Richard, and W. H. Skinner.	Portland, Maine	Car coupling	July 4, 1865.
49,605	Clark, Wm. H	Cincinnati, Ohio	Tent frames	Aug. 29, 1865.
	Clark, Wm. H. (*See* Maltby & Oborn, assignors.)			
1,916	Clark, Wm. J	Southington, Conn	Bolts, carriage, dies for (Reissue)	Mar. 28, 1865.
1,917	Clark, Wm. J	Southington, Conn	Bolts (Division of reissue)	Mar. 28, 1865.
	Clark, Wm. S., and John Keats. (*See* Keats & Clark.)			
51,783	Clarke, Arthur	Philadelphia, Pa	Hog scalder, portable	Dec. 26, 1865.
	Clarke, Chas. M., and B. W. Robinson. (*See* Hall, A. W., assignor.)			
46,448	Clarke, Elizur E., assignor to Franklin N. Clarke	New Haven, Conn	Pasteboard, machine for cutting	Feb. 21, 1865.
46,522	Clarke, Elizur E., assignor to Franklin N. Clarke	New Haven, Conn	Pasteboard for boxes, machine for cutting	Feb. 21, 1865.
46,604	Clarke, Elizur E., assignor to Franklin N. Clarke	New Haven, Conn	Pasteboard for boxes, machine for cutting	Feb. 28, 1865.
50,654	Clarke, Elizur E., assignor to Franklin N. Clarke	New Haven, Conn	Privies, construction of. (Antedated October 13, 1865)	Oct. 24, 1865.
47,280	Clarke, Geo. B	Leonardsville, N. Y	Spittoon and foot warmer, combined	Apr. 18, 1865.
51,777	Clarke, G. E., assignor to self and Sylvester Bullen	Racine, Wis	Traps, animal	Dec. 26, 1865.
46,078	Clarke, James A	New York, N. Y	Wool, machine for washing	Jan. 31, 1865.
2,080	Clarke, James G., assignor to S. H. Burton & Co	Cincinnati, Ohio	Stove, cooks' (Design)	June 6, 1865.
48,773	Clarke, James G., assignor to S. H. Burton & Co	Cincinnati, Ohio	Grate for cooking stove	July 11, 1865.
48,053	Clarke, Thomas W	Manchester, N. H	Printing machines, washing the blankets of	June 6, 1865.
49,606	Clarke, William M	Butternuts, Ind	Leather, machine for scouring	Aug. 29, 1865.
46,778	Clary, David A	Pittsfield, Mass	Governors	Mar. 14, 1865.
50,686	Clary, John, and Elijah B. Torrey	Ithaca, N. Y	Wells, artesian, filter for	Oct. 31, 1865.
	Clay, C. M. (*See* Broadwell, Lewis Wells, assignor.)			
	Clay, Cassius M. (*See* Siepel, John, assignor.)			
49,980	Clay, William W	Philadelphia, Pa	Knitting machines	Sept. 19, 1865.

47,522	Clayton, James	Brooklyn, N. Y	Crank wrist connections	May 2, 1865.
48,657	Clayton, William and Lewis	Philadelphia, Pa	Mills, cider	July 11, 1865.
	Clegg, C. A., *et al.* (*See* Silvers, Aaron, assignor.)			
	Clegg, Thomas. (*See* Petrie & Taylor, assignors.)			
45,702	Clemens, G. H	United States army	Saw-mills	Jan. 3, 1865.
49,721	Clemens, Gilbert H	Cincinnati, Ohio	Saw-mills	Sept. 5, 1865.
50,455	Clemens, Gilbert H	Cincinnati, Ohio	Saw-mills	Oct. 17, 1865.
50,334	Clemens, Nathan S	New York, N. Y	Fire-arm, breech-loading. (Antedated April 29, 1865)	Oct. 10, 1865.
46,047	Clement, Daniel B., assignor to self and Duane H. Nash	Brooklyn, N. Y	Hay forks, horse. (Antedated July 24, 1864)	Jan. 24, 1865.
51,560	Clement, John C	Kenduskeag, Me	Planting, hoeing, and digging potatoes, combined machine for	Dec. 19, 1865.
47,281	Clement, Richard	Philadelphia, Pa	Legs, artificial	Apr. 18, 1865.
	Clements, Charles C. (*See* Tomlinson, Abraham, assignor.)			
46,079	Cleminshaw, Charles	Troy, N. Y	Filters	Jan. 31, 1865.
50,335	Clemm, Charles, and Clemm, August	Philadelphia, Pa Baden, Pa	Analine red, manufacture of	Oct. 10, 1865.
48,369	Clemons, George F	Springfield, Mass	Sewing machines, cloth guide for	June 27, 1865.
46,080	Cleu, John F	New York, N Y	Ordnance, submarine, valve for	Jan. 31, 1865.
	Cleveland, E. S., and J. H. Pattee. (*See* Pattee & Cleveland.)			
	Cleveland, Samuel E., and Thomas S. Ray. (*See* Ray & Cleveland.)			
	Cleveland, Samuel E., and Thomas S. Ray. (See Ray & Cleveland.)			
	Clifford, John C. (*See* Nimbs, A. B., assignor.)			
46,336	Clinton, Charles	Blooming Grove, N. Y	Car coupling	Feb. 14, 1865.
50,687	Clippinger, Josiah A	Newton, Iowa	Movement, mechanical	Oct. 31, 1865.
51,425	Clock, D. H., and F. D. Ryan	Newville, Ind	Trace fastener	Dec. 12, 1865.
49,981	Close, Jeremiah	Brooklyn, N. Y	Planing machines	Sept. 19, 1865.
49,982	Close, Jeremiah, and Ira Buckman, jr	Brooklyn, N. Y	Hinges	Sept. 19, 1865.
51,426	Close, Jeremiah, and Ira Buckman, jr	Brooklyn, N. Y	Hinges	Dec. 12, 1865.
47,523	Close, W. R	Bangor, Me	Yoke, ox	May 2, 1865.
47,597	Close, W. R., assignor to self and G. W. Merrell	Bangor, Me	Saws, circular, hanging	May 2, 1865.
	Cloude, Alfred, and Hiram Richmond. (*See* Richmond & Cloude.)			
51,697	Clough, Samuel G	Waupun, Wis	Wagons, rubber springs for	Dec. 26, 1865.
46,992	Clum, Henry A	Rochester, N. Y	Balances	Mar. 28, 1865.
47,620	Clute, John	Cohoes, N. Y	Knitting machine burrs	May 9, 1865.
51,294	Cobb, Russell	Hadley, Mich	Hay, means for loading	Dec. 5, 1865.
50,456	Coburn, H. R	Lowell, Mass	Odometers	Oct. 17, 1865.
	Coburn, James, *et al.* (*See* Swan, Thomas, assignor.)			
48,154	Coburn, John H	Lowell, Mass	Looms, shuttles for	June 13, 1865.
48,481	Coburn, John W., assignor to self and O. F. Case	New Haven, Conn	Soles, water-proof	June 27, 1865.
50,336	Coburn, Samuel	Stamford, Conn	Detergents, manufacture of	Oct. 10, 1865.
46,081	Cochard, Alexander	Port Richmond, N. Y	Beverage	Jan. 31, 1865.
48,519	Cochran, D. M., and A. Gaar	Richmond, Ind	Stacking straw, machine for	July 4, 1865.
47,932	Cochran, John B	Brooklyn, N. Y	Valves, slide	May 30, 1865.
47,088	Cochran, John W	New York, N. Y	Fire-arm, breech-loading	Apr. 4, 1865.
47,396	Cochran, John W	New York, N. Y	Fire-arm, breech-loading	Apr. 25, 1865.
49,722	Cochrane, John	Wall Township, N. J	Railway chairs	Sept. 5, 1865.
46,178	Cochrane, William F., assignor to self and Warder & Child	Springfield, Ohio	Harvesters	Jan. 31, 1865.
46,179	Cochrane, William F., assignor to self and Warder & Child	Springfield, Ohio	Harvesters	Jan. 31, 1865.
46,180	Cochrane, William F., assignor to self and Warder & Child	Springfield, Ohio	Harvesters	Jan. 31, 1865.
46,181	Cochrane, William F., assignor to self and Warder & Child	Springfield, Ohio	Harvesters	Jan. 31, 1865.
46,182	Cochrane, William F., assignor to self and Warder & Child	Springfield, Ohio	Harvesters	Jan. 31, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
46,183	Cochrane, William F., assignor to self and Warder & Child	Springfield, Ohio	Harvesters	Jan. 31, 1865.
49,024	Cochrane, William F., assignor to self, B. H. Warder, and J. C. Child.	Springfield, Ohio	Harvesting machines	July 25, 1865.
50,066	Cochrane, William F., assignor to self, B. H. Warder, and J. C. Child.	Springfield, Ohio	Harvester rakes	Sept. 19, 1865.
50,906	Codman, Martha P.	Boston, Mass.	Cups, drinking, for the sick	Nov. 14, 1865.
47,164	Codmus, Jasper G.	Port Richmond, N. Y.	Windlass for tightening ships' standing rigging	Apr. 4, 1865.
50,222	Coe, Orson A.	Charlestown, Ohio	Tanning, process for	Oct. 3, 1865.
47,397	Coes, William	Worcester, Mass.	Horseshoe	Apr. 25, 1865.
49,723	Coffee, Earl D.	Hollistown, Mass.	Boots	Sept. 5, 1865.
51,107	Coffin, David N. B., jr., assignor to self and J. D. Spaulding	Boston, Mass.	Capstan, power	Nov. 21, 1865.
48,370	Coffin, George	Jamaica Plains, Mass.	Anchor	June 27, 1865.
49,233	Coffin, George	Boston, Mass.	Steering apparatus	Aug. 8, 1865.
50,688	Cogan, Joseph	Boston, Mass.	Strap-ring or clasp	Oct. 31, 1865.
49,607	Cogswell, William	Ottawa, Ill.	Harvesters	Aug. 29, 1865.
49,608	Cogswell, William	Ottawa, Ill.	Harvesters	Aug. 29, 1865.
2,007	Cogswell, William, and Ira, jr., assignors through mesne assignments to William Cogswell and William H. H. Cushman.	Ottawa, Ill.	Harvesters (Reissue)	June 20, 1865.
46,993	Colahan, Samuel	Cleveland, Ohio	Baling, machine for cutting and preparing hay for	Mar. 28, 1865.
51,295	Colburn, Levi H.	Chicago, Ill.	Propeller, screw	Dec. 5, 1865.
51,509	Colburn, E. T., assignor to self and William P. and Isaac Gannett.	Boston, Mass.	Clothes sprinkler	Dec. 12, 1865.
45,909	Colburn, G. F. J.	Newark, N. J.	Combs	Jan. 17, 1865.
46,082	Colburn, G. F. J.	Newark, N. J.	Combs	Jan. 31, 1865.
46,296	Colburn, G. F. J., assignor to James T. and Horace A. Pratt.	Newark, N. J.	Coat and hat hook	Feb. 7, 1865.
1,997	Colburn, G. F. J., assignor to James T. and Horace A. Pratt.	New York, N. Y.	Coat and hat hook (Reissue)	June 13, 1865.
1,862	Colburn, Richard, and L. W. Hansom	Norwich, Conn.	Engines, steam, supplemental valves for (Reissue)	Feb. 7, 1865.
48,155	Colby, Daniel C.	Claremont, N. H.	Fertilizers to growing plants, implement for distributing	June 13, 1865.
48,156	Colby, Daniel C.	Claremont, N. H.	Sifter, flour	June 13, 1865.
48,520	Colby, Daniel C.	New York, N. Y.	Sifter, flour	July 4, 1865.
47,489	Colby, Daniel C., assignor to self, D. W. Rawson, J. Reddington, and T. I. Harris.	Claremont, N. H.	Heating and fuel-saving device	Apr. 25, 1865.
1,991	Colby, George J.	Waterbury, Vt.	Willow, machine for peeling (Reissue)	June 13, 1865.
1,992	Colby, George J.	Waterbury, Vt.	Rubber, India, rolls to metallic shafts, mode of fastening. (Reissue.)	June 13, 1865.
48,907	Colby, George J.	Waterbury, Vt.	Carpets, flooring or dust rack for	July 25, 1865.
48,908	Colby, George J.	Waterbury, Vt.	Window shutters	July 25, 1865.
48,909	Colby, George J.	Waterbury, Vt.	Latch, knob	July 25, 1865.
49,983	Colby, Hall.	New York, N. Y.	Compound, lubricating, for journal boxes, &c.	Sept. 19, 1865
50,337	Cole, A. H.	Sylvania, Ohio	Buckle	Oct. 10, 1865.
46,779	Cole, Benjamin	Brooklyn, N. Y.	Safe, money	Mar. 14, 1865.
	Cole, James A., and Albert Moore. (*See* Moore & Cole.)			
	Cole, Job H., and Malcolm Campbell. (*See* Campbell & Cole.)			
	Cole, Lewis L., and Walter W. Jerome. (*See* Jerome & Cole.)			
48,910	Cole, Sylvanus	Pawtucket, R. I.	Clothes-dryer	July 25, 1865.

51,147	Coleman, Ambrose B	Lyndonville, N. Y	Yoke, neck	Nov. 28, 1865.
	Coleman, E. C., *et al.* (*See* Higgins, S. B., assignor.)			
48,157	Coleman, J. A	Providence, R. I	Rings, clinch, machine for making	June 13, 1865.
	Coleman, James E. (*See* Kellogg, E. C. C., assignor.)			
	Coleman, James E. (*See* Kellogg, E. C. C., assignor.)			
46,337	Coleman, P	Philadelphia, Pa	Nuts, machines for making	Feb. 14, 1865.
	Coleman, W., & Sons, *et al.* (*See* Gladding, Henry C., assignor.)			
50,907	Coles, D. B. and A. D	Newark, N. J	Potash, prussiate of, retorts for the manufacture of	Nov. 14, 1865.
47,241	Colgan, Michael, assignor to self, C. D. Cooper, and L. H. Beckwith	Port Jervis, N. Y	Hook, chain	Apr. 11, 1865.
48,658	Coller, Isaac H	Poughkeepsie, N. Y	Harvesting machines	July 11, 1865.
46,882	Collier, F. J	Cannonsburg, Pa	Carpet stretcher	Mar. 21, 1865.
51,296	Collins, Giles H	Wayne, Mich	Weather strips, for doors	Dec. 5, 1865.
46,642	Collins, I. M	New Bedford, Mass	Car brakes	Mar. 7, 1865.
51,148	Collins, John J. G	Philadelphia, Pa	Pumps, deep-well	Nov. 28, 1865.
50,338	Collins, M. Grier, assignor to H. Resley and H. H. Hartsock	Cumberland, Md	Paddle wheel, feathering	Oct. 10, 1865.
49,984	Collins, Michael H	Chelsea, Mass	Lamps	Sept. 19, 1865.
51,021	Collins, Michael H	Chelsea, Mass	Amalgamator	Nov. 21, 1865.
49,505	Collins, Owen	New York, N. Y	Gas, illuminating, apparatus for making	Aug. 22, 1865.
50,097	Collins, Thos. A., Josiah D. Evans, and Thomas J. Smedley	Smyrna, Del	Tiles, drain, machine for making	Sept. 26, 1865.
	Colquitt, C. A., and F. W. Ritterhoff. (*See* Ritterhoff & Colquitt.) Reissue.			
	Colquitt, C. A., *et al.* (*See* Ritterhoff, Colquitt, & Mulchahey.)			
46,883	Colton, Martin	Sardinia, N. Y	Gates, flood, for mill-dams	Mar. 21, 1865.
46,994	Colvin, L. O	Philadelphia, Pa	Milkers, cow	Mar. 28, 1865.
50,457	Colvin, L. O	Philadelphia, Pa	Breast pumps	Oct. 17, 1865.
47,089	Colwell, J. W	Macedonia, Ohio	Railroad switches	Apr. 4, 1865.
	Colwell, L. and J. (*See* Shaw, W. A., assignor.)			
1,884	Comins, Reuben	Troy, N. Y	Bridges, truss (Reissue)	Feb. 28, 1865.
	Comstock, A. M., and A. C. G. Rathburn. (*See* Rathburn & Comstock.)			
46,995	Comstock, Cicero	Milwaukee, Wis	Spader, rotary	Mar. 28, 1865.
50,223	Conant, A. P	Smithland, Ky	Saw-mills	Oct. 3, 1865.
48,659	Condell, John	Morristown, N. Y	Arms, artificial	July 11, 1865.
48,660	Condell, John	Morristown, N. Y	Legs, artificial	July 11, 1865.
48,792	Condell, John	Morristown, N. Y	Legs, artificial	July 18, 1865.
	Condict, N. W., and D. S. Steele. (*See* Stevens, Wm. J., assignor.) Reissue.			
48,521	Cone, S. J	Middletown, Conn	Lathe, chuck for	July 4, 1865.
47,165	Conklin, James H	Yorktown, N. Y	Scales, platform	Apr. 4, 1865.
49,826	Conkling, G., assignor to Caroline A. Conklin	Conklingsville, N. Y	Leather water-proof, process for rendering	Sept 5, 1865.
	Conkling, Theodore. (*See* Tunstill, William, assignor.)			
	Connell, Wm. P., and Wm. M. Silkman. (*See* McClave, Wm., ass'or.)			
50,339	Conner, J. D	Bloomington, Ill	Stoves, cooking	Oct. 10, 1865.
50,098	Conner, William	Wilmington, Del	Supporter, sash	Sept. 26, 1865.
51,510	Connery, James, assignor to self and Wm. G. Pennypacker	Wilmington, Del	Steam generators	Dec. 12, 1865.
48,661	Connett, Matthew F	Evansville, Ind	Wood-bending machines	July 11, 1865.
	Connor, Edward O., and Philip Keenan. (*See* Keenan & Connor.)			
47,151	Connor, John, assignor to self and Henry A. Ayling	Boston, Mass	Weaving fabrics with button-holes therein, mode of	Apr. 4, 1865.
46,083	Conrad, Peter	Dorchester, Ill	Roller and corn planter, combined	Jan. 31, 1865.
49,724	Conradt, Charles	Philadelphia, Pa	Pitcher, ice	Sept. 5, 1865.
50,340	Considine, Thomas	Chicago, Ill	Wagon boxes, casting skeins of	Oct. 10, 1865.
48,662	Converse, F. B	New York, N. Y	Ripping sutures in cloth, instrument for	July 11, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
49,086	Converse, William F	Harrison, Ohio	Car springs, railroad	Aug. 1, 1865.
47,090	Converse, William H	Newcastle, Maine	Harrow and roller combined	Apr. 4, 1865.
49,725	Conwell, W. C	Scranton, Pa	Piston rods, packing-rings for	Sept. 5, 1865.
49,726	Cook, Charles	Winsted, Conn	Axle boxes	Sept. 5, 1865.
48,522	Cook, D. M	Mansfield, Ohio	Saccharine liquids, apparatus for boiling and evaporating	July 4, 1865.
51,698	Cook, George W	Rock Island, Ill	Cars, railroad	Dec. 26, 1865.
50,908	Cook, Henry A	Hillsdale, N. Y	Teams to farming implements, machine for attaching	Nov. 14, 1865.
51,427	Cooke, Henry A	Charlestown, Mass	Bed bottom	Dec. 12, 1865.
49,485	Cook, Henry O	England	Wind wheels	Aug. 15, 1865.
49,859	Cook, Isaac	St. Louis, Mo	Flour packers	Sept. 12, 1865.
49,381	Cook, John R	Winsted, Conn	Curtain fastener	Aug. 15, 1865.
	Cook, Ransom	Saratoga Springs, N. Y	Augers (Extension)	June 13, 1865.
46,544	Cook, Stephen D., and Henry J. Webb	Lima, Mich. / Dexter, Mich	Seeding machine	Feb. 28, 1865.
	Cook, S. S. and B. M., and S. A. Bailey. (*See* Allender, John, assignor.) Reissue.			
	Cook, William T. (*See* Faught, Lemuel P., assignor.)			
49,382	Cooley, DeWitt C., Charles F. Smith, and C. E. Bradley	Aurora, Ill	Composition for filling the pores of wood	Aug. 15, 1865.
49,676	Coolidge, John G. W., assignor to Edwin S. Hovey	Portland, Maine	Car coupling	Aug. 29, 1865.
50,341	Coombs, Eden N	Memphis, Ind.	Box for packing eggs	Oct. 10, 1865.
49,234	Coombs, Jesse	Greenfield, Mass	Limbs, artificial	Aug. 8, 1865.
	Coombs, William J. (*See* Murray, Edgar, assignor.)			
	Cooper, C. D., *et al.* (*See* Colgan, Michael, assignor.)			
49,383	Cooper, Charles W	Brooklyn, E. D., N. Y	Glue stock, treating	Aug. 15, 1865.
48,482	Cooper, Edward A., assignor to self and J. M. Johnston	Buffalo, N. Y	Hook, snap	June 27, 1865.
	Cooper, E. K., and G. A. Liebig. (*See* Liebig & Cooper.)			
50,458	Cooper, Thomas	Cincinnati, Ohio	Axles, car, machines for rolling	Oct. 17, 1865.
47,398	Cooper, Stillman	Antwerp, N. Y	Mop head	Apr. 25, 1865.
50,689	Cooper, William W	Washington, D. C	Gauging and ullaging casks	Oct. 31, 1865.
51,428	Copeland, John	Quasqueton, Iowa	Cultivators	Dec. 12, 1865.
47,702	Copeland, Salem	Worcester, Mass	Harvesters, guard-fingers for	May 16, 1865.
49,384	Copleston, Edwin	Wrentham, Mass	Bonnets and hats, machines for pressing	Aug. 15, 1865.
48,793	Coppin, Daniel G	Cincinnati, Ohio	Tools, boring, coupling-shafts for	July 18, 1865.
50,099	Coppin, Daniel G	Cincinnati, Ohio	Hinges, shutter	Sept. 26, 1865.
48,911	Corbin, J. S	Ann Arbor, Mich	Bag holders	July 25, 1865.
	Corbin, P. and F. (*See* Arnold, Stephen D., assignor.)			
	Corbin, P. and F. (*See* Turnbull, Andrew, assignor.) Design.			
	Corbin, P. and F. (*See* Blake, Henry D., assignor.)			
47,524	Corduan, Joseph	Brooklyn, N. Y	Awning and reflector	May 2, 1865.
	Corey, Thomas, and Caleb S. Stearns. (*See* Stearns & Corey.)			
47,800	Cornell, F. F., jr	New York, N. Y	Presses, baling	May 23, 1865.
48,261	Cornell, F. F., jr	New York, N. Y	Presses, baling	June 20, 1865.
50,798	Cornell, F. F., jr	New York, N. Y	Presses, baling, constructing	Nov. 7, 1865.
2,101	Cornell, F. F., jr	New York, N. Y	Presses, baling (Reissue)	Nov. 7, 1865.
49,087	Corr, C. W	Carlinville, Ill	Ploughs, gang	Aug. 1, 1865.

50,797	Corser, Samuel A	Holyoke, Mass	Car coupling	Nov. 7, 1865.
	Cory, Abner. (*See* McMahel, John, assignor.)			
46,449	Coryell, Alfred P	Janesville, Wis	Medical compound. (Antedated February 16, 1865)	Feb. 21, 1865.
48,158	Cosfeldt, John	Philadelphia, Pa	Low-water detectors	June 13, 1865.
51,561	Costolo, Michael W	Boston, Mass	Belt-fastener	Dec. 19, 1865.
51,022	Cotton, Elijah H	Manchester, N. H	Mills, grinding	Nov. 21, 1865.
	Cottrell, C. B., and N. Babcock. (*See* Stillman, C. A., assignor.)			
49,025	Couch, John O., assignor to the Metropolitan Washing Machine Co.	Middletown, Conn	Wringing machine	July 25, 1865.
50,531	Couch, John O., assignor to the Metropolitan Washing Machine Co.	Middlefield, Conn	Wringing machine	Oct. 17, 1865.
49,385	Couch, Joseph	Harrison, Me	Car coupling	Aug. 15, 1865.
48,371	Cousins, William	New York, N. Y	Projectiles, arrow, for ordnance	June 27, 1865.
2,066	Covell, F. E	Portland, Me	Trade mark (Design)	May 16, 1865.
	Covert, H. W., and James Sargent. (*See* Sargent & Covert.)			
48,372	Covert, Richard	Brooklyn, N. Y	Coal, lump, artificial	June 27, 1865.
50,909	Cowan, B. F	New York, N. Y	Books, pocket, portemonnaies, &c	Nov. 14, 1865.
46,450	Cowles, James A	Chicago, Ill	Hay-forks, horse	Feb. 21, 1865.
48,373	Cowles, R. P	New Haven, Conn	Carriage-knob	June 27, 1865.
	Cowperthwaite, Thomas G. (*See* Metzler, Henry F., assignor.)			
49,235	Cox, Albert W	Dublin, Ind	Ditching machine	Aug. 8, 1865.
	Cox, Church & Co. (*See* Vedder, Nicholas S., assignor.) Design.			
	Cox, Church & Co. (*See* Vedder, Nicholas S., assignor.) Design.			
	Cox, Church & Co. (*See* Vedder, Nicholas S., assignor.) Design.			
	Cox, Church & Co. (*See* Vedder, Nicholas S., assignor.) Design.			
	Cox, Church & Co. (*See* Glass, James, assignor.)			
51,649	Cox, David B., assignor to Cox, Church & Co	Troy, N. Y	Stoves, coal, base-burning	Dec. 19, 1865.
48,374	Cox, Frederick W	Brooklyn, N. Y	Pen and pencil case	June 27, 1865.
49,486	Cox, John H., and John and William Murphy	Montreal, C. W	Spirit meter	Aug. 15, 1865.
	Cox, Whiteman & Cox. (*See* Steffe, Jacob, assignor.) Design.			
45,815	Cox, William	Philadelphia, Pa	Car springs	Jan. 10, 1865.
	Coy, Henry. (*See* Roberts, Edwin, assignor.)			
46,643	Coyle, Edward	Albany, N. Y	Padlock	Mar. 7, 1865.
47,933	Craig, Isaac E	Cleveland, Ohio	Steam generators	May 30, 1865.
48,523	Craig, Waldo P	Milton, Ky	Presses, baling	July 4, 1865.
45,816	Cramer, Louis	Brooklyn, N. Y	Top, spinning	Jan. 10, 1865.
48,524	Crandal, Amos	Great Bend. Pa	Well drills	July 4, 1865.
50,799	Crandell, Germond	Washington, D. C	Fish-hooks, double-lever	Nov. 7, 1865.
50,655	Crane, C. J., assignor to J. F. Crane	Burr Oak, Mich	Wheel for axles	Oct. 24, 1865.
45,978	Crane, Elliott H	Jonesville, Mich	Leather-channelling tool	Jan. 24, 1865.
46,451	Crane, Elliott H	Jonesville, Mich	Fastener, door	Feb. 21, 1865.
	Crane, James. (*See* Battley, Edwin, assignor.)			
48,159	Crane, John	Glover, Vt	Presses, wool	June 13, 1865.
51,562	Crane, John E	Lowell, Mass	Dryer, wool	Dec. 19, 1865.
2,228	Crane, Martin H., and Samuel A. Traugh, ass'rs to Crane, Breed & Co.	Cincinnati, Ohio	Burial case (Design)	Dec. 12, 1865.
46,084	Crane, Moses G	Chelsea, Mass	Air engines, hot	Jan. 31, 1865.
46,780	Crane, Moses G	Boston, Mass	File-cutting machines	Mar. 14, 1865.
48,525	Crane, Moses G	Boston, Mass	Egg-beater	July 4, 1865.
49,727	Crane, Moses G	Boston, Mass	Match card	Sept. 5, 1865.
50,690	Crane, Thomas	Fort Atkinson, Wis	Stump extractors	Oct. 31, 1865.
49,728	Crawford, Clay	East Cleveland, Ohio	Steam generators	Sept. 5, 1865.
49,236	Crawford, Samuel	New York, N. Y	Boilers, locomotive	Aug. 8, 1865.
51,650	Craven, Thomas C., assignor to self and William H. Davis	Albany, N. Y	Hay spreaders and elevators, combined	Dec. 19, 1865.
51,023	Crawford, Charles W	Pittsburg, Pa	Engines, steam, slide-valves for	Nov. 21, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
48,501	Crea, John	Allegheny, Pa	Stoves, heating	June 27, 1865.
47,703	Crellin, J	Marshalltown, Iowa	Rakes, hay horse	May 16, 1865.
47,189	Cresson, Charles M	Philadelphia, Pa	Gas regulator	Apr. 11, 1865.
49,088	Crever, James A., and Fielding H. Keeney	Cincinnati, Ohio	Mills, cider	Aug. 1, 1865.
45,817	Crichton, W. H	La Porte, Ind	Seeding machine	Jan. 10, 1865.
46,781	Crismar, J. C	Omaha City, Neb	Press, sugar-cane	Mar. 14, 1865.
49,237	Crispin, Silas	New York, N. Y	Cartridges, metallic, priming	Aug. 8, 1865.
50,224	Crispin, Silas	New York, N. Y	Fire-arms, revolving	Oct. 3, 1865.
51,563	Critchley, John	Portsmouth, N. H	Tool, expanding	Dec. 19, 1865.
50,226	Croak, Daniel	Milwaukee, Wis	Boxes, sheet-metal, construction of	Oct. 3, 1865.
46,545	Crocker, John D	Norwich, Conn	File-cutting machine	Feb. 28, 1865.
46,967	Croft, Edward, ass'r to Benedict & Burnham Manufacturing Co	Waterbury, Conn	Wire, beaded, machine for making	Mar. 21, 1865.
49,985	Crofut, Charles	Weston, Conn	Hoe, weeding	Sept. 19, 1865.
47,160	Croll, Alexander A	England	Gas, preparation of materials to be used in the purification of	Apr. 4, 1865.
46,996	Cromelien, Rowland	Washington, D. C	Saws	Mar. 28, 1865.
	Crompton, G., and M. A. Furbush. (*See* Brown, Edward W., assignor.) Reissue.			
46,997	Cromwell, James M	New York, N. Y	Toy, dancing	Mar. 28, 1865.
51,429	Cronk, M. C	Auburn, N. Y	Bed-bottom	Dec. 12, 1865.
50,800	Crooke, John J	New York, N. Y	Lead, refining	Nov. 7, 1865.
47,399	Crooker, Erastus	Buffalo, N. Y	Oil ejectors	Apr. 25, 1865.
46,546	Crosby, Augustine B	Boston, Mass	Amalgamating gold and silver, machine for	Feb. 28, 1865.
46 644	Crosby, C. O	New Haven, Conn	Fish-hooks, machines for making	Mar. 7, 1865.
48,794	Crosby, C. O	New Haven, Conn	Box covers for the exhibition of samples	July 18, 1865.
50,225	Crosby, C. O	New Haven, Conn	Sewing machines for making ruffled fabrics	Oct. 3, 1865.
51,150	Crosby, C. O	New Haven, Conn	Needles, machine for making	Nov. 28, 1865.
51,149	Crosby, Cyrus B	Cortlandville, N. Y	Clothes rack	Nov. 28, 1865.
	Crosby, George L. (*See* Edson, James T., assignor.)			
45,959	Crosby, Thomas G., assignor to B. Strong and M. H. Crosby	Buffalo, N. Y	Rudder	Jan. 17, 1865.
48,334	Crosby, Thomas G., assignor to G. H. Strong and M. H. Crosby	Buffalo, N. Y	Signal lamps, raising and lowering	June 20, 1865.
	Cross, Albert W. (*See* Howall, W. A., assignor.)			
	Cross, Dane & Westlake. (*See* Westlake, William, assignor.)			
47,091	Cross, David S	Cincinnati, Ohio	Car-brakes, railroad	Apr. 4, 1865.
	Cross, James E., *et al.* (*See* Westlake, William, assignor.)			
46,217	Cross, John R	Chicago, Ill	Wells, oil, packing for	Feb. 7, 1865.
49,386	Cross, John R	Chicago, Ill	Drill or pump-rods, coupling for	Aug. 15, 1865.
50,910	Cross, John R	Chicago, Ill	Wells, oil, packing for	Nov. 14, 1865.
50,459	Cross, William B	Sacramento, Cal	Heaters, feed-water	Oct. 17, 1865.
46,199	Crossly, Thomas, assignor to the American Water-proof Cloth Co	Bridgeport, Conn	Cloth, flocked, dyed, or printed	Jan. 31, 1865.
46,200	Crossly, Thomas, assignor to the American Water-proof Cloth Co	Bridgeport, Conn	Dyeing, printing, and manufacture of water-proof flocked cloth	Jan. 31, 1865.
48,015	Crossly, Thomas, assignor to the American Water-proof Cloth Co	Bridgeport, Conn	Fabrics, water-proof, manufacture of	May 30, 1865.
48,762	Crossly, Thomas, assignor to the American Water-proof Cloth Co	Bridgeport, Conn	Fabrics, water-proof, manufacture of	July 11, 1865.
49,729	Crowe, Richard R	Chicago, Ill	Table	Sept. 5, 1865.
49,387	Crowell, Chauncey L	Peoria, Ill	Fire-machine	Aug. 15, 1865.
	Crowell, G. W., and E. Hinkley. (*See* Hinkley & Crowell.)			

48,262	Crowell, Jacob B	Greencastle, Pa	Drills, wheat	June 20, 1865.
2,011	Crowell, Jacob B	Greencastle, Pa	Drills, wheat (Reissue)	July 4, 1865.
47,801	Crowell, Sommers	Philadelphia, Pa	Fences, iron railings for	May 23, 1865.
	Crum, John	Ramapo, N. Y	Files, machinery for cutting (Extension)	June 24, 1865.
	Crum, John, assignor to William T. Nicholson	Ramapo, N. Y	Files, machinery for cutting (Disclaimer)	June 12, 1865.
*7 45,953	Crutchett, James	England	Thread from the skein, apparatus for winding. (Patented in England August 23, 1864.)	Jan. 17, 1865.
49,089	Culp, William H	Hammondsville, Ohio	Lamp chimneys	Aug. 1, 1865.
50,911	Culp, William H	Hammondsville, Ohio	Pumps	Nov. 14, 1865.
46,452	Culver, Ephraim	Shelburne, Mass	Clothes-dryer	Feb. 21, 1865.
47,802	Culver, Ephraim	Shelburne, Mass	Washing machine	May 23, 1865.
45,979	Culver, John P	New York, N. Y	Hooks and eyes	Jan. 24, 1865.
1,911	Cumings, DeWitt C	Fulton, N. Y	Straw-cutter (Reissue)	Mar. 28, 1865.
49,090	Cummings, George L	New York, N. Y	Jacks, carriage	Aug. 1, 1865.
50,801	Cummings, Jeptha	Perry, Mich	Yoke, neck	Nov. 7, 1865.
1,848	Cummings, John A., assignor, through mesne assignments, to the Dental Vulcanite Company.	Boston, Mass	Gums and palates, artificial (Reissue)	Jan. 10, 1865.
1,904	Cummings, John A., assignor, through mesne assignments, to the Dental Vulcanite Company.	Boston, Mass	Gums and palates, artificial (Reissue)	Mar. 21, 1865.
	Cummings, J. H., and Isaac T. Hooton. (*See* Hooton & Cummings.)			
46,338	Cummings, Marcellus V	Winthrop, Maine	Railroad switches	Feb. 14, 1865.
51,297	Cummings, Samuel A	Middleton, Mass	Knife-blade holder	Dec. 5, 1865.
49,238	Cummings, Schuyler	Middlefield, N. Y	Vines, hop, by charring the stems, process of preserving the roots of.	Aug. 8, 1865.
49,860	Cumnock, Alexander G	Lowell, Mass	Mules, self-acting	Sept. 12, 1865.
49,861	Cumnock, Alexander G	Lowell, Mass	Spinning, self-acting mules for	Sept. 12, 1865.
	Cunningham, Charles W., and Justus Chollar. (*See* Chollar & Cunningham.			
51,024	Cunningham, James	Bangor, Maine	Tobacco pipe	Nov. 21, 1865.
51,564	Cuppers, Gustavus	New York, N. Y	Levels, plumb	Dec. 19, 1865.
47,803	Curran, John A	United States army	Shells, explosive, percussion fuze for	May 23, 1865.
	Currie, John, and John Martino. (*See* Martino and Currie.) Design.			
48,663	Currier, B. T	Boston, Mass	Gauges, carpenters'	July 11, 1865.
48,526	Currier, John W	Holyoke, Mass	Iron, smoothing	July 4, 1865.
48,795	Curry, John Penn	New York, N. Y	Vessels, construction of	July 18, 1865.
50,766	Curtis, Andrew J., assignor to B. F. Waldron and Chas. T. Seavey	Winterport, Maine	Boot and harness clamp	Oct. 31, 1865.
	Curtis, C. H., and J. W. Gray. (*See* Gray & Curtis.)			
49,388	Curtis, Ford B	Gardiner, Maine	Horseshoe calking vice	Aug. 15, 1865.
48,912	Curtis, Samuel W	Stoughton, Mass	Flower-pots, machine for cleaning	July 25, 1865.
	Cushing, James, and Truman Merriam. (*See* Merriam & Cushing.)			
	Cushing, Levi L., jr., *et al.* (*See* Halvorson, Halvor, assignor.)			
	Cushing, Levi L., jr., *et al.* (*See* Halvorson, Halvor, assignor.)			
50,419	Cushing, Mark A., assignor to the Glenn's Falls Paper Company.	Glenn's Falls, N. Y	Paper pulp, process for treating hemp, flax, &c., for the manufacture of.	Oct. 10, 1865.
46,884	Cushing, Samuel N	Waltham, Mass	Gates, railway	Mar. 21, 1865.
50,691	Cushman, A. F	Hartford, Conn	Chucks, scroll	Oct. 31, 1865.
51,384	Cushman, A. F., assignor to the Warwick Tool Company	Hartford, Conn	Chucks, scroll	Dec. 5, 1865.
	Cushman, William H. H., and William Cogswell. (*See* Cogswell, William and Ira, jr., assignors.) Reissue.			
48,618	Custer, George, assignor to self, Charles Toll, and John Paxton	Monroe, Mich	Horseshoes	July 4, 1865.
49,091	Cutter, Volney	Cincinnati, Ohio	Sewing machines, shuttle-driver for	Aug. 1, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
49,092	Cutter, Volney	Cincinnati, Ohio	Sewing machines, &c., shuttles for	Aug. 1, 1865.
49,677	Cuttica, Charles, assignor to Henry C. Glinsmann	New York, N. Y	Table	Aug. 29, 1865.
48,054	Dacey, Dennis A	New York, N. Y	Tool for cutting off boiler tubes	June 6, 1865.
50,767	Daft, Thomas B., assignor to D. D. Williamson	England	Ships, iron, construction of	Oct. 31, 1865.
50,988	Dahis, Florian, assignor, through mesne assignments, to H. B. Voss	Brooklyn, N. Y	Button fastenings	Nov. 14, 1865.
	Dailey, Hiram, and S. Atwater. (*See* Johnson, Chas. W., assignor.)			
47,092	Dailey, John M	New York, N. Y	Trunk stays	Apr. 4, 1865.
46,782	Dailey, Oliver A	Washington, D. C	Boxes for hats and bonnets	Mar. 14, 1865.
2,040	Dailey, Oliver A	Washington, D. C	Boxes for hats and bonnets (Reissue)	Aug. 1, 1865.
	Dakin, A. C., and Samuel W. Fosdick. (*See* Fosdick & Dakin.)			
50,912	Dalbey, George W	Wheeling, West Va	Bellows	Nov. 14, 1865.
49,239	Dalbey, William H	Clarksburg, Ind	Ditching machine	Aug. 8, 1865.
46,339	Daley, John, and Joseph H. Marvill	Philadelphia, Pa	Boilers, tool for scaling tubes of	Feb. 14, 1865.
51,025	Dalman y Sala, Esteban	New York, N. Y	Propeller	Nov. 21, 1865.
	Dalton Knitting Machine Company. (*See* Hart, Philo W., ass'or.)			
49,986	Damerel, William	Brooklyn, N. Y	Umbrellas	Sept. 19, 1865.
48,055	Dana, Charles H	West Lebanon, N. H	Label, sheep	June 6, 1865.
49,609	Dana, Charles H	West Lebanon, N. H	Labels, sheep's, machine for making	Aug. 29, 1865.
	Dana, Edward A. (*See* Schenkl, John P., assignor.)			
50,692	Dana, Edward A	Brookline, Mass	Projectiles, sabots for	Oct. 31, 1865.
47,162	Danchell, Frederick L. H	England	Drying and charring peat	Apr. 4, 1865.
	Dane, B. S., and Calvin Parsons. (*See* Parsons & Dane.)			
	Dane, James F., *et al.* (*See* Westlake, William, assignor.)			
50,656	Danfield, Samuel D., assignor to self and Henry Wood	Philadelphia, Pa	Car-brake shoes	Oct. 24, 1865.
47,621	Danford, Ebenezer	Geneva, Ill	Engines, steam	May 9, 1865.
51,026	Danford, Ebenezer	Geneva, Ill	Steam generators	Nov. 21, 1865.
48,160	Danforth, Elijah H	Jamestown, N. Y	Corundum wheels, mould for making	June 13, 1865.
47,804	Daniels, Henry H	Philadelphia, Pa	Wells, artesian, boring tools for	May 23, 1865.
49,730	Dann, H. D	Waupun, Wis	Seeding machines	Sept. 5, 1865.
46,085	Danner, John	Canton, Ohio	Tub for washing and other purposes	Jan. 31, 1865.
48,375	Danner, John	Canton, Ohio	Washing machine	June 27, 1865.
50,802	Danner, John	Canton, Ohio	Washing machines, roller for	Nov. 7, 1865.
46,885	Danziger, M. J	New York, N. Y	Cigarettes	Mar. 21, 1865.
	Darling, M. C. and K. A., *et al.* (*See* Prosser & Darling.)			
49,093	Darling, Samuel	Bangor, Maine	Inkstands	Aug. 1, 1865.
	Darlington, J. H., and A. H. Hook. (*See* Hook & Darlington.) Reissue.			
	Darlington, J. H., and A. H. Hook. (*See* Hook & Darlington.)			
50,342	Dart, Edward	New York, N. Y	Ore-crushing stamps	Oct. 10, 1865.
49,094	Dart, H. B	Westfield, Mass	Vice	Aug. 1, 1865.
	Da Silveira, J. G. (*See* Wothley, J., assignor.)			
48,534	Daughish, John, assignor to Steuben T. Bacon	England	Bread, aërated, machinery for the manufacture of. (Patented in England March 16, 1864.)	July 4, 1865.
	Davenport, E. J. (*See* Jones, Edward, assignor.)			
50,100	Davenport, Joseph	Nessenskum, Wis	Washing machine	Sept. 26, 1865.

45,790	Davey, Thomas N., assignor to self and Thomas Davey, sr.	Jeffersonville, Ind	Chair splints, machines for cutting	Jan. 3, 1865.
50,462	David, Jacob	Brooklyn, N. Y	Stand, music	Oct. 17, 1865.
48,865	David, V. R., assignor to self, H. R. Fowler, and N. G. Davisson.	Newark, Ill	Washing machines	July 18, 1865.
47,934	Davidson, Amory	Clinton, Mass	Washing machines	May 30, 1865.
1,940	Davidson, C. H. and H. E., assignor to Hamilton D. Lockwood	Charlestown, Mass	Syringes, enema (Reissue)	Apr. 25, 1865.
51,778	Davidson, H. E., and C. H. Davidson, deceased, by H. E. Davidson, administrator.	Gloucester, Mass	Syringes, elastic	Dec. 26, 1865.
47,166	Davie, W. M., and Charles T. Webber	Janesville, Wis	Steam-pressure indicators	Apr. 4, 1865.
47,490	Davies, George C., assignor to Ohio Erolin Company	Dayton, Ohio	Presses, cotton	April 25, 1865.
47,766	Davies, Robt. H., ass'r to self, J. W. Landell, and Thos. J. Young.	Philadelphia, Pa	Engines, steam	May 16, 1865.
46,998	Davies, S. M.	Chicago, Ill	Lights, head, engine	Mar. 28, 1865.
47,935	Davis, Biram C	Herkimer, N. Y	Tack driver	May 30, 1865.
47,190	Davis, Caleb S	Lancaster, Pa	Spinning flax, machines for	Apr. 11, 1865.
	Davis, Evans, and Joseph and James Montgomery. (*See* Montgomery & Davis.)			
	Davis, George L., *et al.* (*See* Stone, J. M., assignor.)			
	Davis, George L., *et al.* (*See* Stone, J. M., assignor.)			
45,910	Davis, Guy	Syracuse, N. Y	Valves, oscillating	Jan. 17, 1865.
50,657	Davis, H. V., assignor to Daniel S. Perkins	Amherst, N. H	Planters, seed	Oct. 24, 1865.
51,258	Davis, Jarvis, assignor to Patrick Smith	Buffalo, N. Y	Fire-arms, breech-loading	Nov. 28, 1865.
1,857	Davis, John	Alleghany, Pa	Car brakes, railroad (Reissue)	Jan. 31, 1865.
47,936	Davis, John	Alexandria, Va	Steam pressure gauges	May 30, 1865.
50,803	Davis, John	Northampton, Ill	Horses, device for spurring or driving	Nov. 7, 1865.
50,913	Davis, John	Alleghany, Pa	Separators, grain. (Antedated November 2, 1865)	Nov. 14, 1865.
50,914	Davis, John	Alleghany, Pa	Drills, grain. (Antedated November 2, 1865)	Nov. 14, 1865.
50,915	Davis, John	Alleghany, Pa	Planters, corn. (Antedated November 9, 1865)	Nov. 14, 1865.
50,916	Davis, John	Alleghany, Pa	Seeders, broadcast	Nov. 14, 1865.
49,731	Davis, J. N	Georgetown, Ohio	Water-closets, seat for	Sept. 5, 1865.
49,937	Davis, J. P	Middletown, Conn	Cores, moulding	May 30, 1865.
47,622	Davis, John R	Bloomfield, Iowa	Corn planter	May 9, 1865.
49,506	Davis, John S	Tiffin, Ohio	Harvesting machines	Aug. 22, 1865.
50,693	Davis, John S	Tiffin, Ohio	Harvesters	Oct. 31, 1865.
45,703	Davis, M. C	Guilford, Ohio	Sheep, machine for shearing	Jan. 3, 1865.
49,610	Davis, Seth M	Rushville, Mo	Engines, rotary	Aug. 29, 1865.
	Davis, Sylvester, and J. Smith. (*See* Pettegrew, David L., ass'r.)			
	Davis, T. M., *et al.* (*See* Martin, B. G., assignor.)			
	Davis, T. M., *et al.* (*See* Martin, B. G., assignor.)			
	Davis, T. M., *et al.* (*See* Martin, B. G., assignor.)			
	Davis, T. M., *et al.* (*See* Martin, B. G., assignor.)			
51,651	Davis, William, and Job Johnson, assignors to Job Johnson	Brooklyn, N. Y	Fish hooks	Dec. 19, 1865.
51,027	Davis, W. B	Brooklyn, N. Y	Piston rods, packing for	Nov. 21, 1865.
	Davis, William H. (*See* Craven, Thomas C., assignor.)			
48,527	Davison, Darius, assignor to Oliver Davisson	New York, N. Y	Cigars	July 4, 1865.
50,562	Davison, H. J.	New York, N. Y	Furnace, welding and steam boiler, arrangement of a	Oct. 24, 1865.
	Davisson, N. G., and H. R. Fowler. (*See* David, V. R., assignor.)			
48,376	Dawes, Alfred	Waltham, Mass	Saws	June 27, 1865.
50,917	Dawley, Job S., and John Blocher	Buffalo, N. Y	Sewing machines, thread-waxing attachment for	Nov. 14, 1865.
48,377	Day, Austin G	Seymour, Conn	Barrels and other vessels, bung for	June 27, 1865.
50,101	Day, Austin G	New York, N. Y	Amalgamator	Sept. 26, 1865.
50,227	Day, Benjamin F., and Charles H. Nelson	Biddeford, Maine	Looms, pickers for	Oct. 3, 1865.
49,507	Day, Daniel R., and John G. Folsom	Winchendon, Mass	Spools, jack	Aug. 22, 1865.
51,151	Day, Edmund	Springfield, Mass	Bridle bits	Nov. 28, 1865.

List of patentees of inventions, designs, and reissues, &c.—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
49,240	Day, John	Brooklyn, N. Y	Silk, thread, &c., apparatus for dressing	Aug. 8, 1865.
50,694	Day, Lester, and Henry Chapman	Buffalo, N. Y	Barrel for holding petrolcum	Oct. 31, 1865.
46,218	Day, Theodore D	New York, N. Y	Dress protectors, ladies'	Feb. 7, 1865.
49,732	Day, Theodore D	New York, N. Y	Skirt hoops, joints of	Sept. 5, 1865.
	Dayton, Frederick C., jr. (*See* Morse, Francis B., assignor.)			
50,225	Dean, Charles R	Randolph, N. Y	Tanning, apparatus for	Oct. 3, 1865.
48,528	Dean, Frank	Beloit, Wis	Planters, corn	July 4, 1865.
48,708	Dean, James C	Chicago, Ill	Dental hammers	July 11, 1865.
50,532	Dearborn, G. K., assignor to self and C. M. Bromrich	South Boston, Mass	Fastener, blind	Oct. 17, 1865.
46,184	Dears, Charles, assignor to E. P. Archer and George Pancoast	New York, N. Y	Lanterns, portable	Jan. 31, 1865.
51,565	De Blois, T. A	Annapolis, Md	Engines, steam	Dec. 19, 1865.
50,804	Deby, Julian; Alexander Trippel, and; Eugene Gaussoin	New York, N. Y; Brooklyn, N. Y; Baltimore, Md	Steel, manufacture of	Nov. 7, 1865.
45,818	Decker, David	New York, N. Y	Piano fortes	Jan. 10, 1865.
46,453	Decker, Ebenezer F	Southport, Maine	Fishing line sinkers	Feb. 21, 1865.
46,547	Decker, Frederick	Ostrander, Ohio	Harvesters, clover	Feb. 28, 1865.
51,511	Decrow, A. W., assignor to Edmund Hoole	Bangor, Maine	Alarm, burglar	Dec. 12, 1865.
48,619	Dederick, P. K., assignor to L. and P. K. Dederick	Albany, N. Y	Presses, beater	July 4, 1865.
49,678	Dederick, P. K., assignor to L. and P. K. Dederick	Albany, N. Y	Presses, hay beater, capstan for working	Aug. 29, 1865.
	Deemer, E. K. (*See* Percival, Levin C., assignor.)			
46,454	Deere, John	Moline, Ill	Ploughs	Feb. 21, 1865.
51,566	Defenbaugh, Lewis	Kokomo, Ind	Beehives	Dec. 19, 1865.
	De Forest, C. V., *et al.* (*See* Mason, Malchor B., assignor.)			
	De Forest, C. V., *et al.* (*See* Mason, Malchor B., assignor.)			
	De Gray, James, and Andrew Hamilton. (*See* Hamilton & De Gray.)			
	Deighm, J. R., *et al.* (*See* Zerns, William, assignor.)			
49,389	Deighton, Richard, jr	Fairweather, Ill	Ploughs	Aug. 15, 1865.
51,152	Deitz, Alonzo E	Brooklyn, N. Y	Locks	Nov. 28, 1865.
	De Lange, L. H., and Daniel K. Albright. (*See* Albright & De Lange.)			
	De Lange, L. H., and Daniel K. Albright. (*See* Albright & De Lange.) Design.			
	De Lange, L. H., and Daniel K. Albright. (*See* Albright & De Lange.) Design.			
	De Lange, L. H., and Daniel K. Albright. (*See* Albright & De Lange.)			
45,791	Deltour, William, assignor to self, C. W. Baker, J. M. Shechan, M. Toomey, L. R. Fitzgerald, and S. S. Derrickson.	New York, N. Y	Paper stock, manufacture of	Jan. 3, 1865.
51,124	De Massy, L. P. R	France	Press, filtering	Nov. 21, 1865.
51,277	De Massy, L. P. R	France	Press, filtering	Nov. 28, 1865.
48,529	Demming, B., and D'Arcy Porter	Cleveland, Ohio	Engines, steam	July 4, 1865.
47,525	Demond, George W	Boston, Mass	Chimney cap	May 2, 1865.
	De Murguiondo, P. (*See* Hodges, J. Wilson, assignor.)			
51,153	Dempsey, James	Richmond, Ind	Planes, splint	Nov. 28, 1865.

50,229	Denham, Isaac	Lanesfield, Kansas	Cultivators	Oct. 3, 1865.
47,526	Denham, Z. W	Washington, D. C	Paper fastener	May 2, 1865.
49,862	Denholm, Robert	Newbury, Ohio	Blast, hot, apparatus	Sept. 12, 1865.
51,699	Denison, L. E	Winthrop, Conn	Photographic printing, pressure frame for	Dec. 26, 1865.
50,805	Denison, Roswell, and John B. Moon	Grand Rapids, Mich	Mills, grinding	Nov. 7, 1865.
51,567	Dennett, Daniel	Buxton, Maine	Cultivator	Dec. 19, 1865.
48,913	Dennis, Gideon G	Dover, N. H	Matches, friction, manufacture of	July 25, 1865.
46,219	Dennisson, John N	Newark, N. J	Fire engines	Feb. 7, 1865.
46,297	Dennisson, John N., assignor to self and Gould Brothers	Newark, N. J	Rivets	Feb. 7, 1865.
	Dental Vulcanite Company. (*See* Cummings, John A., assignor.) Reissue.			
	Dental Vulcanite Company. (*See* Cummings, John A., assignor.) Reissue.			
	Denton, Joseph B. (*See* Higbee, Jonas, assignor.)			
49,095	Depuy, Moses	Pittsburg, Pa	Propeller, reciprocating	Aug. 1, 1865.
49,508	Derby, Elias H., and True, West	Boston, Mass Roxbury, Mass	Cars, railway	Aug. 22, 1865.
45,947	De Rosthorn, Joseph, assignor to Clemens Herschel	Austria	Metal, molten, casting	Jan. 17, 1865.
46,086	Derr, Samuel	Lock Haven, Pa	Stump extractors	Jan. 31, 1865.
	Derrickson, J. T., *et al.* (*See* Deltour, William, assignor.)			
48,530	Derrom, Andrew	Paterson, N. J	Bridge, trestle	July 4, 1865.
49,338	Desalusse, Joseph H., assignor to Alfred B. Justice	Philadelphia, Pa	Locks, fastening keys in	Aug. 8, 1865.
	Desbarats, Geo. E., and Wm. A. Leggo. (*See* Leggo & Desbarats.)			
	Des Courtis, Edward A., and Prosper Malapert. (*See* Malapert & Des Courtis.)			
49,057	Descoutures, M. L. M	France	Fire-arms, breech-loading	July 25, 1865.
46,315	Desgoffe, Auguste, and Achille Ollivier	France	Hydraulic apparatus	Feb. 7, 1865.
49,863	Devereux, Charles U	New York, N. Y	Watch safes	Sept. 12, 1865.
49,509	Devlan, Patrick S	Jersey City, N. J	Composition for lining journal boxes, &c	Aug. 22, 1865.
51,700	Devlan, Patrick S	Jersey City, N. J	Composition for lining journal boxes	Dec. 26, 1865.
51,701	Devlan, Patrick S	Jersey City, N. J	Composition for lining journal boxes	Dec. 26, 1865.
51,702	Devlan, Patrick S	Jersey City, N. J	Composition for lining journal boxes	Dec. 26, 1865.
51,298	DeVout, Bartholomew	Harrisburg, Pa	Car brakes, block for	Dec. 5, 1865.
47,282	Dewey, Albert L	Westfield, Mass	Motion, treadle	Apr. 18, 1865.
48,531	Dewhurst, Richard James	New York, N. Y	Railroad chairs, screw bolt for fastening	July 4, 1865.
46,220	DeWitzleben, Arthur	Washington, D. C	Fire-arms, ball screw for	Feb. 7, 1865.
50,230	Devos, Ezra	South Britain, Conn	Spinning jacks	Oct. 3, 1865.
48,234	Dexter, A. G., assignor to self and Thomas Mackell	San Francisco, Cal	Bell, or gong, door	June 13, 1865.
51,299	Dexter, Albert M	Philadelphia, Pa	Necktics	Dec. 5, 1865.
49,241	Dexter, T. B., assignor to T. W. Beamis	Lynn, Mass	Furnaces, steam-boiler	Aug. 8, 1865.
2,037	De Zouche, Isaac, assignor to Bridge, Beach & Co.	Cincinnati, Ohio	Stove ornament (Design)	Mar. 14, 1865.
	Dial, Frank. (*See* Miller, Charles E., assignor.)			
46,548	Dibble, C. G	Farmington, Iowa	Stave machines	Feb. 28, 1865.
50,461	Dibble, William H	Bordentown, N. J	Dental apparatus	Oct. 17, 1865.
	Diboll, A. C. (*See* Wright, E. M., assignor.)			
	Diboll, A. C. (*See* Wright, E. M., assignor.)			
49,242	Dick, Dundas	New York, N. Y	Capsules, manufacture of	Aug. 8, 1865.
50,918	Dickenson, Ferdinand, jr	Hartford, Conn	Wagon-shaft shackles	Nov. 14, 1865.
1,993	Dickerson, Edward N	New York, N. Y	Boilers, steam (Reissue)	June 13, 1865.
45,911	Dickerson, John H	Cincinnati, Ohio	Forge, portable	Jan. 17, 1865.
50,919	Dickerson, M. J., and Jacob Stuber	Titusville, Pa Utica, N. Y	Wells, deep, tubular apparatus for	Nov. 14, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
46,886	Dickey, Adam	Cincinnati, Ohio	Knapsack supporter	Mar. 21, 1865.
47,805	Dickey, Julius C	Saratoga Springs, N. Y	Drills, rock	May 23, 1865.
48,914	Dickey, Julius C	Saratoga Springs, N. Y	Drills, rock	July 25, 1865.
	Dickey, Julius C	Saratoga Springs, N. Y	Drying fruit and other articles, revolving frames for. (Extens'n)	May 16, 1865.
47,191	Dickinson, E. M	Fitchburg, Mass	Boots and shoes, machine for holding the uppers of	Apr. 11, 1865.
	Dickinson, Samuel C. (*See* Teter, David B., assignor.)			
51,703	Dickinson, William P	Reading, Pa	Filters and coolers	Dec. 26, 1865.
48,532	Dickson, John A	Scranton, Pa	Coal breaker	July 4, 1865.
49,864	Dickson, John A	Scranton, Pa	Railroad rails	Sept. 12, 1865.
	Diehl, Charles A. (*See* Groves, F., assignor.)			
48,533	Dieterich, Gustave	New York, N. Y	Washstand appliances for one-armed persons	July 4, 1865.
	Dieterichs, E. T., and Waldron J. Cheyney. (*See* Cheyney & Dieterichs.)			
51,385	Dillingham, Hiram P., assignor to M. O. Waggoner and George P. Roberts.	Norwalk, Ohio	Saws	Dec. 5, 1835.
	Dills, Kern & Co. (*See* Leeper & Kidder, assignors.) Reissue.			
49,733	Dills, O. P	Falmouth, Ky	Ploughs	Sept. 5, 1865.
49,243	Dimmock, Samuel R	Syracuse, N. Y	Car brakes	Aug. 8, 1865.
49,865	Dimock, Ira	Florence, Mass	Cotton, &c., machine for combing	Sept. 12, 1865.
1,877	Dimpfel, Frederick P	New York, N. Y	Engines, steam (Reissue)	Feb. 21, 1865.
	Dimpfel, Frederick P	New York, N. Y	Engines, steam (Extension)	
49,686	Dion, Charles	Montreal, Canada	Alarm, fire	Aug. 29, 1865.
	Dirks, R., *et al.* (*See* Christy, James, assignor.)			
46,087	Disbrow, William	San Francisco, Cal	Horseshoe	Jan. 31, 1865.
47,093	Disbrow, William	San Francisco, Cal	Seat and desk, school	Apr. 4, 1865.
45,980	Disston, Charles	Philadelphia, Pa	Saws, cross-cut, method of attaching handles to	Jan. 24, 1865.
47,806	Disston, Charles	Philadelphia, Pa	Saw-setting machine	May 23, 1865.
	Disston, Henry. (*See* Baker, John G., assignor.)			
51,430	Dixon, John W	Philadelphia, Pa	Paper pulp, apparatus for the manufacture of	Dec. 12, 1865.
51,431	Dixon, John W	Philadelphia, Pa	Paper pulp, apparatus for the manufacture of	Dec. 12, 1865.
51,432	Dixon, John W	Philadelphia, Pa	Paper pulp from cornstalks, process for making	Dec. 12, 1865.
51,433	Dixon, John W	Philadelphia, Pa	Paper pulp, process for making	Dec. 12, 1865.
51,568	Dixon, John W	Philadelphia, Pa	Paper, manufacture of	Dec. 19, 1865.
51,569	Dixon, John W	Philadelphia, Pa	Paper pulp, process for bleaching	Dec. 19, 1865.
51,570	Dixon, John W	Philadelphia, Pa	Paper pulp, manufacture of	Dec. 19, 1865.
51,571	Dixon, John W	Philadelphia, Pa	Paper pulp, manufacture of	Dec. 19, 1865.
51,572	Dixon, John W	Philadelphia, Pa	Paper pulp, process for making	Dec. 19, 1865.
51,704	Dixon, John W	Philadelphia, Pa	Wood, straw, &c., process for pulping	Dec. 26, 1865.
51,705	Dixon, John W	Philadelphia, Pa	Wood, straw, and other vegetable fibres, process for treating	Dec. 26, 1865.
51,706	Dixon, John W	Philadelphia, Pa	Paper pulp, process for treating vegetable fibre for the manufacture of.	Dec. 26, 1865.
50,806	Doane, Charles R	Spotswood, N. J	Jars, fruit, stopper for	Nov. 7, 1865.
45,981	Doane, William H	Cincinnati, Ohio	Saws, scroll	Jan. 24, 1865.
48,161	Doane, William H	Cincinnati, Ohio	Sawing machine, scroll	June 13, 1865.
49,584	Doane, William H., assignor to self and J. A. Fay & Co	Cincinnati, Ohio	Journal box	Aug. 22, 1865.

48,535	Dobbins, Jacob	Litchfield, Mich	Hoop cutting and bending	July 4, 1865.
49,611	Dodds, Lewis C., and Robert Walsh	Three Rivers, Mich	Carriage tops	Aug. 29, 1865.
46,858	Dodds, William B., assignor to self and Niel Macneale	Cincinnati, Ohio	Locks	Mar. 14, 1865.
47,192	Dodge, Hezekiah	Albany, N. Y	Presses	Apr. 11, 1865.
51,512	Dodge, Hiram S., assignor to J. W. Doty	Lockport, N. Y	Connecting-rod couplings	Dec. 12, 1865.
47,527	Dodge, James	Waterford, N. Y	Metals, grinding and polishing	May 2, 1865.
48,915	Dodge, James	Waterford, N. Y	Rolling irregular forms, machine for	July 25, 1865.
47,807	Dodge, John A	Auburn, N. Y	Harvesters	May 23, 1865.
2,084	Dodge, Levi	Waterford, N. Y	Metals, swaging and punching (Reissue)	Oct. 10, 1865.
46,645	Dodge, M. B	New York, N. Y	Quicksilver, apparatus for gathering	Mar. 7, 1865.
47,094	Dodge, M. B	New York, N. Y	Ores, desulphurizing	Apr. 4, 1865.
47,808	Dodge, M. B	New York, N. Y	Ores, apparatus for grinding and amalgamating	May 23, 1865.
50,563	Dodge, M. B	New York, N. Y	Quarts crushers	Oct. 24, 1865.
48,378	Dodge, Nehemiah	New York, N. Y	Pumps, deep well	June 27, 1865.
45,982	Dodge, Porter	Perkinsville, Vt	Stoves, soap-stone, joining and fitting corners of	Jan. 24, 1865.
46,455	Dodge, Porter	Perkinsville, Vt	Stoves, soap-stone	Feb. 21, 1865.
	Dodge, Thomas H. (*See* Bartlett, Stephen S., assignor.) Reissue.			
	Dodge, Thomas H., *et al.* (*See* Taylor, George G., assignor.)			
45,912	Dodge, William C	Washington, D. C	Cartridge retractor for many-chambered fire-arms	Jan. 17, 1865.
45,983	Dodge, William C	Washington, D. C	Fire-arms, revolving	Jan. 24, 1865.
48,536	Dodge, William C	Washington, D. C	Cartridge case, metallic	July 4, 1865.
	Dodge, William C. (*See* Adams, John S., assignor.)			
	Dodge, William C., *et al.* (*See* Blackie, John, assignor.)			
47,095	Dodge, William Foster	New York, N. Y	Pump pistons	Apr. 4, 1865.
47,193	Dodge, William Foster	New York, N. Y	Pumps	Apr. 11, 1865.
48,162	Doellbor, F	Philadelphia, Pa	Tobacco pipe	June 13, 1865.
	Doggett Wm. F. (*See* Bolender, Frederick C., assignor.)			
	Dolan, Thomas. (*See* Hill, Emma, assignor.)			
50,768	Dole, L. A., assignor to self and Albert R. Silver	Salem, Ohio	Spokes, machines for tenoning	Oct. 31, 1865.
49,244	Donaldson, John	Rockford, Ill	Stand, lamp, and clothes-dryer combined	Aug. 8, 1865.
47,400	Donnell, James	Alleghany, Pa	Well boring, devices for	Apr. 25, 1865.
51,154	Dony, William	Honesdale, Pa	Ointment	Nov. 28, 1865.
47,704	Doolittle, John H	Ansonia, Conn	Metal, sheet, machines for making clasps from	May 16, 1865.
49,390	Doolittle, John H	Ansonia, Conn	Fruit basket	Aug. 15, 1865.
49,866	Doolittle, John H	Ansonia, Conn	Fruit boxes or baskets	Sept. 12, 1865.
50,102	Doolittle, John H	Ansonia, Conn	Skirts, hoop, mode of making clasps for	Sept. 26, 1865.
48,379	Dopp, H. W	Buffalo, N. Y	Burners, hydrocarbon, for cooking and heating	June 27, 1865.
48,380	Dopp, H. W	Buffalo, N. Y	Heater, sad iron	June 27, 1865.
51,434	Dopp, H. W	Buffalo, N. Y	Lock, seal	Dec. 12, 1865.
49,339	Dorman, A. M., assignor to self and Samuel Yewdall	Philadelphia, Pa	Insignia, military, woven in cloth	Aug. 8, 1865.
48,537	Dorman, J. P	Galesburg, Ill	Clothes-dryer	July 4, 1865.
49,245	Dorman, J. P	Galesburg, Ill	Mangler, steak	Aug. 8, 1865.
50,920	Dorman, J. P	Galesburg, Ill	Bedstead	Nov. 14, 1865.
46,221	Dorsch, M. P	New York, N. Y	Boxes, wooden, paper-covered	Feb. 7, 1865.
46,340	Dorsch, M. P	New York, N. Y	Collars, paper, machines for making	Feb. 14, 1865.
47,503	Dorvault, F. L. M	France	Fire-arms. capsules for preventing the soiling of	Apr. 25, 1865.
50,695	Dorwart, Benjamin K	Lancaster, Pa	Crank motion, reciprocating	Oct. 31, 1865.
46,341	Dotterer, Davis H	Philadelphia, Pa	Cars, railway, construction of	Feb. 14, 1865.
49,510	Dotterer, Davis H	Philadelphia, Pa	Car trucks, railway	Aug. 22, 1865.
47,705	Doty, G. W	Ravenna, Ohio	Bottle, syphon	May 16, 1865.
49,612	Doty, G. W	Lockport, N. Y	Photographic cards, apparatus for mounting and printing	Aug. 29, 1865.
48,664	Doty, G. W., and E. A., and W. F. Stein	Ravenna, Ohio	Photographers' decanter	July 11, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Doty, J. W. (*See* Dodge, Hiram S., assignor.)			
46,523	Doubler, J. W. H., assignor to self and John E. Wynne	Warren, Ill	Drill, grain. (Antedated February 6, 1865)	Feb. 21, 1865.
49,844	Dougall, James Dalziel	Great Britain	Fire-arms, breech-loading. (Patented in England April 15, 1864)	Sept. 5, 1865.
	Dougherty, Horace F. (*See* Ingersoll, P. C., assignor.)			
47,528	Douglass, Aaron	Paterson, N. J	Railroad rails, lock joint for	May 2, 1865.
48,263	Douglass, Erastus	Lowell, Mass	Washing machine	June 20, 1865.
50,564	Douglass, George	Luzerne, Pa	Railroad switch	Oct. 24, 1865.
50,807	Douglass, George	Scranton, Pa	Car spring	Nov. 7, 1865.
46,783	Doughty, J. H	New York, N. Y	Box, blacking	Mar. 14, 1865.
46,999	Doughty, J. H	New York, N. Y	Clothes dryer	Mar. 28, 1865.
	Doughty, Samuel H. (*See* Draper, James, assignor.) Reissue.			
46,229	Dow, John E	Boston, Mass	Bread and meat slicer	Feb. 7, 1865.
	Dow, N. M. (*See* Ganrage, Samuel F., assignor.)			
	Dow, N. M. (*See* Bundy, Nelson H., assignor.)			
48,381	Dowd, James	Boston, Mass	Wagons	June 27, 1865.
	Downer, Wm. P. (*See* Archer, Wm., assignor.) Reissue.			
46,646	Downes, Nicholas	Syracuse, N. Y	Filters, water. (Antedated February 27, 1865)	Mar. 7, 1865.
	Downes, N. H., *et al.* (*See* Mallory, Wm. H., assignor.)			
48,796	Downie, James	Paterson, N. J	Cloth, hair and grass, machine for preparing woof for the manufacture of.	July 18, 1865.
51,436	Downie, James	Paterson, N. J	Cloth, the weft of which is made of hair, grass, &c.	Dec. 12, 1865.
51,108	Downie, Robert E., assignor to self and Leonard E. Downie	Delavan, Wis	Trusses	Nov. 21, 1865.
47,194	Downing, William H	Philadelphia, Pa	Wells, apparatus for withdrawing tubes from	Apr. 11, 1865.
	Downs, George, and Nathaniel Grant. (*See* Grant & Downs.)			
50,921	Doyle, James J	Sharon, Conn	Steak, beef, crusher	Nov. 14, 1865.
47,255	Drake, Edwin S	Portland, Maine	Saw	Apr. 11, 1865.
51,155	Drake, Francis E	Chicopee, Mass	Skates	Nov. 28, 1865.
47,195	Drake, Mexworth D	Providence, R. I	Spinning frames, upper bearings or bolsters for spindles of	Apr. 11, 1865.
	Drake, Oliver P. (*See* Mihan, Patrick, assignor.)			
48,129	Drake, Robert, assignor to self and J. F. and D. F. Bless	Newark, N. J	Iron, sad	June 6, 1865.
2,046	Draper, James, assignor, through mesne assignments to Samuel H. Doughty.	Clinton Township, N. J	Skirts, skeleton (Reissue)	Aug. 1, 1865.
2,063	Draper, Virgil, assignor to Oscar M. Draper	North Attleboro', Mass	Dies for stamping rings (Reissue)	Sept. 5, 1865.
50,200	Draper, Virgil, assignor to Oscar M. Draper	North Attleboro', Mass	Chain links, device for swaging	Sept. 26, 1865.
51,437	Draper, W. F	Andover, Mass	Stereotype plates, device for casting	Dec. 12, 1865.
48,763	Draper, Wm. W., assignor to self and Alonzo Parker	Greenfield, Mass	Tool stock	July 11, 1865.
51,435	Drawbaugh, Daniel	Eberle's Mills, Pa	Nail-plate feeders	Dec. 12, 1865.
	Dreher, B., and Wm. J. Kinnard. (*See* Kinnard & Dreher.)			
49,734	Dreher, Caspar	Detroit, Mich	Wagons, releasing the tailboards of	Sept. 5, 1865.
50,808	Dreher, Caspar	Detroit, Mich	Screw-thread cutting tool	Nov. 7, 1865.
51,300	Dreher, Caspar	Detroit, Mich	Bolt cutter	Dec. 5, 1865.
50,103	Drennan, C. M	Boston, Mass	Air, apparatus for carburetting	Sept. 26, 1865.
47,623	Drew, Alvah D	Dixon, Ill	Boots, pattern for cutting	May 9, 1865.
	Drew, Columbia. (*See* Gage, Chapman E., assignor.)			
	Drew, Reuben W. (*See* Goddu, Louis, assignor.)			

48,665	Driesslein, Charles L	Chicago, Ill	Hay forks	July 11, 1865.
46,784	Driggs, Spencer B	New York, N. Y	Cars, railroad, running gear for	Mar. 14, 1865.
47,196	Driggs, Spencer B	New York, N. Y	Piano-fortes	Apr. 11, 1865.
48,382	Driggs, Spencer B	New York, N. Y	Lands, marsh and swamp, mode of reclaiming	June 27, 1865.
49,613	Driver, John P	Marengo, Iowa	Lamps	Aug. 29, 1865.
50,696	Driver, John P	Marengo, Iowa	Stoves, cases for enclosing	Oct. 31, 1865.
49,949	Driver, Samuel, assignor to self and Edward Longan	Philadelphia, Pa	Boiler feeders, automatic	Sept. 12, 1865.
48,264	Drum, Simon	Alleghany, Pa	Hinges, shutter	June 20, 1865.
	Drummond, Chas. H. (*See* Small, George G., assignor.)			
50,565	Dryden, William A., and James H. Montgomery	Monmouth, Ill	Mill-stone, dressing, machine for	Oct. 24, 1865.
45,819	Dubber, J. Frederick	Brooklyn, N. Y	Book, pocket	Jan. 10, 1865.
47,624	Dubernet, L	New York, N. Y	Stand, portfolio	May 9, 1865.
45,913	Du Bois, John	Williamsport, Pa	Gates, flood, revolving	Jan. 17, 1865.
50,429	Dubourg, V	Germany	Burners, gas	Oct. 10, 1865.
48,265	Dubreuil, A	Baltimore, Md	Petroleum, apparatus for distilling	June 20, 1865.
51,156	Dubreuil, A	Baltimore, Md	Petroleum, process for distilling	Nov. 28, 1865.
47,167	Duck, John H., and Edwin S. Gould	Elgin, Ill	Washing machine	Apr. 4, 1865.
2,018	Duckworth, Christopher	Mt. Carmel, Conn	Looms (Division 1, reissue)	July 4, 1865.
2,019	Duckworth, Christopher	Mt. Carmel, Conn	Looms (Division 2, reissue)	July 4, 1865.
49,096	Duckworth, Christopher	Mt. Carmel, Conn	Looms, power, harness motion for	Aug. 1, 1865.
	Dudgeon, Richard	New York, N. Y	Press, hydraulic, portable (Extension)	
49,097	Dudgeon, Richard	New York, N. Y	Jacks, hydraulic	Aug. 1, 1865.
	Dudson, Hawthorne & Brothers. (*See* Hawthorne, Thos., ass'or.)			
46,786	Duff, William A., and Jethro J. Griffith	Philadelphia, Pa	Pins, dentists', machines for heading	Mar. 14, 1865.
48,016	Duff, William L., assignor to Henry C. Banks	Quincy, Ill	Collars, paper	May 30, 1865.
46,088	Duffus, George H. S	New Orleans, La	Petroleum, retorts for distilling	Jan. 31, 1865.
46,089	Duffus, George H. S	New Orleans, La	Petroleum, retorts for distilling	Jan. 31, 1865.
46,090	Duffus, George H. S	New Orleans, La	Petroleum, retorts for distilling	Jan. 31, 1865.
50,922	Dugdale, James K	Richmond, Ind	Washing machines	Nov. 14, 1865.
2,012	Dummer, Samuel R	New York, N. Y	Measure and funnel, combined (Reissue)	June 27, 1865.
49,511	Dummer, Samuel R	New York, N. Y	Hinges	Aug. 22, 1865.
50,566	Dummer, Samuel R	New York, N. Y	Hinges	Oct. 24, 1865.
51,438	Dunaway, Elijah F	Cincinnati, Ohio	Weighing grain, machines for	Dec. 12, 1865.
48,266	Dunbar, Edwin	Buffalo, N. Y	Boot heel	June 20, 1865.
2,029	Dunbar, Henry D	Springfield, Mass	Engines, steam, piston for (Reissue)	July 18, 1865.
50,697	Dunbar, Henry D	Springfield, Mass	Pistons, steam, metallic packing for	Oct. 31, 1865.
	Dunbar, Robert. (*See* Wooster, Joab H., assignor.)			
	Dunbar, Robert. (*See* Wooster, Joab H., assignor.)			
46,456	Duncan, Arad., and John M. Zeigler	Aurora, Ill	Lock for car seat	Feb. 21, 1865.
51,573	Duncan, Eli	West Milton, Ohio	Safe, meat	Dec. 19, 1865.
	Duncan, George, *et al.* (*See* Skinner, Duncan & Merighi.)			
46,647	Duncan, William A	Syracuse, N. Y	Hay, machines for raking and loading	Mar. 7, 1865.
50,231	Dunham, Albert S	Taunton, Mass	Stoves, cook	Oct. 3, 1865.
	Dunham, D. M. (*See* Webb, Albion, assignor.)			
48,383	Dunham, George	Unionville, Conn	Nut machine	June 27, 1865
50,923	Dunham, George	Unionville, Conn	Nut machine. (Antedated July 1, 1865)	Nov. 14, 1865.
50,462	Dunham, Henry, jr	Abington, Mass	Shoe, sewed	Oct. 17, 1865.
51,157	Dunham, Henry, jr	Abington, Mass	Sewing machine	Nov. 28, 1865.
50,567	Dunham, Rufus	Portland, Me	Lanterns	Oct. 24, 1865.
48,384	Dunlap, Robert	New York, N. Y	Hats	June 27, 1865.
46,785	Dunning, Benjamin F	Galesburg, Ill	Presses, hay and cotton	Mar. 14, 1865.
47,283	Dunscomb, Edward	Boston, Mass	Piston-rods, guide for	Apr. 18, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,679	Dunscomb, Edward, assignor to Wm. F. Perkins and L. L. Fuller	Boston, Mass	Air, apparatus for carburetting	May 9, 1865.
50,104	Du Pont, Lammot	Wilmington, Del	Gunpowder, plates for pressing	Sept. 26, 1865.
50,568	Du Pont, Lammot	Wilmington, Del	Gunpowder, presses for pressing	Oct. 24, 1865.
51,109	Dupper, Chas. F., assignor to self, J. Benz, and J. Hackert	Bridgeport, Conn	Ivory, artificial	Nov. 21, 1865.
46,549	Dupuy, Charles M	New York, N. Y	Iron and steel directly from the ore, manufacture of	Feb. 28, 1865.
49,987	Durall, George W	Norfolk, Va	Boiler tubes, ferrules for	Sept. 19, 1865.
50,080	Durand, Francis, assignor to E. P. H. Gondonin	France	Gins, cotton	Sept. 19, 1865.
50,300	Durand, John H., assignor to self and James G. Harrison	Kalamazoo, Mich	Bedstead, folding	Oct. 3, 1865.
46,550	Durant, A. P., and D. M. Buckley	Atlanta, Ill	Cultivator, wheel	Feb. 28, 1865.
	Durbin, John C., and Miles K. Lewis. (*See* Lewis & Durbin.)			
	Durbin, John C., *et al.* (*See* Lewis, Durbin & Lewis.)			
	Durfee, Z. S. (*See* Griffiths, John, assignor.)			
46,391	Durre, Henry	New York, N. Y	Engines, rotary	Aug. 15, 1865.
48,385	Duryee, George	New York, N. Y	Ink, printing, manufacture of	June 27, 1865.
48,797	Dutemple, William	Malden, Mass	Pipe-couplings	July 18, 1865.
50,541	Duterne, Victor	France	Engines, steam, stuffing-boxes for	Oct. 17, 1865.
2,047	Dutton, Rufus	New York, N. Y	Harvesters (Reissue)	Aug. 8, 1865.
2,079	Dutton, Rufus, assignor, through mesne assignments, to self and Richard L. Allen.	New York, N. Y	Mowing machines (Reissue)	Oct. 3, 1865.
50,343	Dutton, Thomas, and Thomas Maguire	Port Jervis, N. Y	Wells, pipes or tubes for	Oct. 10, 1865.
	Du Vergier, H. A. G. (*See* Mille, M. J. A., assignor.)			
48,798	Dwelley, Lucius H	Dorchester, Mass	Nails, horseshoe, machine for making	July 18, 1865.
51,158	Dwelley, Lucius H	Dorchester, Mass	Cars, air-brakes for	Nov. 28, 1865.
	Dwelley, Lucius H., and S. S. Putnam. (*See* Putnam & Dwelley.)			
45,704	Eads, James B	St. Louis, Mo	Ordnance, mounting and operating. (Antedated Dec. 29, 1864)	Jan. 3, 1865.
46,222	Eads, James B	St. Louis, Mo	Guns in turrets, operating	Feb. 7, 1865.
46,223	Eads, James B	St. Louis, Mo	Guns, and gun-turrets, operating	Feb. 7, 1865.
46,342	Eads, James B	St. Louis, Mo	Ordnance, operating	Feb. 14, 1865.
	Eagle Auger and Skate Manufacturing Company, (*See* Tracy, Edward H., assignor.)			
46,551	Earl, Benjamin A	Philadelphia, Pa	Wool, lubricant for	Feb. 28, 1865.
47,938	Earl, B. A., and Henry Holcroft	Media, Pa / Philadelphia, Pa	Wool, apparatus for oiling	May 30, 1865.
47,401	Earl, Henry	Edwards, N. Y	Sap pans	Apr. 25, 1865.
50,809	Earle, Jeremiah H	Fall River, Mass	Hats	Nov. 7, 1865.
49,827	Earle, John E., assignor to J. P. Lindsay	New Haven, Conn	Pipe, cement, machine for making	Sept. 5, 1865.
45,820	Earle, Oscar T	Springfield, Mass	Engines, steam, valves for	Jan. 10, 1865.
46,887	Earle, Timothy	Valley Falls, R. I	Jars, preserve	Mar. 21, 1866.
48,916	Earnshaw, John	Lowell, Mass	Sifter, flour	July 25, 1865.
48,538	Easby, John W	Washington, D. C	Metal plates, machine for bending	July 4, 1865.
49,867	Easterbrook, M	Geneva, N. Y	Harrows	Sept. 12, 1865.
46,091	Eastman, Henry W	Baltimore, Md	Crib and cradle	Jan. 31, 1865.
	Eastman, John E. (*See* Penketh, James, assignor.)			
47,402	Eastwick, Edward P	Baltimore, Md	Sirups and saccharine solutions, process for treating	Apr. 25, 1865.
46,648	Eaton, Calvin	Webster, N. Y	Ladder, extension	Mar. 7, 1865.

	Eaton, D. C., *et al.* (*See* Arnold, Alfred, assignor.)			
49,988	Eaton, James	Boston, Mass	Spinning machines	Sept. 19, 1865.
	Eaves, Richard, and John A. Hotchkiss. (*See* Hotchkiss & Eaves.)			
48,917	Eberhard, William	Sigourney, Iowa	Spinning machines	July 25, 1865.
46,888	Eberhardt, Jonas	Philadelphia, Pa	Dyers, producing coloring matter for	Mar. 21, 1865.
47,197	Eby, John	Muncie, Ind	Bedstead, wardrobe	Apr. 11, 1865.
47,767	Eccles, James, assignor to self and Robert Kershaw	Philadelphia, Pa	Wool in carding machines, machinery for oiling	May 16, 1865.
46,649	Eckert, Augustus	Trenton, Ohio	Warmer, foot	Mar. 7, 1865.
51,159	Eckert, Huldah	Lodi, Wis	Vinegar, manufacture of	Nov. 28, 1865.
48,799	Eddy, Edwin A	Racine, Wis	Cars, platform, stake-holders for	July 18, 1865.
48,800	Eddy, Edwin A	Racine, Wis	Cars, platform, stake-holders for	July 18, 1865.
	Eddy, Moses, and Charles Pool. (*See* Pool & Eddy.)			
	Eddy, Samuel, and Peter H. Jackson. (*See* Jackson & Eddy.)			
50,924	Eddy, Samuel	Brooklyn, N. Y	Stove-pipe thimble	Nov. 14, 1865.
49,989	Edge, George W	Jersey City, N. J.	Retorts, clay, decarbonizing	Sept. 19, 1865.
49,392	Edgerton, Walter	Spiceland, Ind.	Evaporator, cane-juice	Aug. 15, 1865.
48,666	Edmister, Worden, and Stephen Johnson	Mt. Vernon, Ohio	Churns	July 11, 1865.
	Edmonds, C. L. (*See* Brodhead, Wessel, assignor.)			
	Edoms, John B. (*See* Bull, Daniel, assignor.)			
49,393	Edson, Jacob	Boston, Mass	Pumps, ships'	Aug. 15, 1865.
47,491	Edson, James T., assignor to self and Geo. L. Crosby	Stowe, Mass	Game boards	Apr. 25, 1865.
47,000	Edson, Samuel B	Kokomo, Ind	Collar, horse	Mar. 28, 1865.
48,539	Edson, Temperance P.	Cambridge, Ill	Vessels, sunken, &c., inflator for raising	July 4, 1865.
48,620	Edson, William, assignor to Shedd and Edson	Boston, Mass	Hygrometers	July 4, 1865.
51,160	Edwards, Albert W.	Mendota, Ill	Ice-cream freezer	Nov. 28, 1865.
48,540	Edwards, Alfred	Chicago, Ill	Radiator, heat	July 4, 1865.
49,735	Edwards, Alfred	Chicago, Ill	Traps, animal	Sept. 5, 1865.
47,706	Edwards, Eben	Boston, Mass	Range, heating and cooking	May 16, 1865.
	Edwards, Giles, and Robert Thomas. (*See* Thomas & Edwards.)			
47,625	Egan, James P	Zanesville, Ohio	Lamp burners	May 9, 1865.
47,403	Egan, R	Brooklyn, N. Y	Awls	Apr. 25, 1865.
51,439	Egan, Richard	Brooklyn, N. Y	Burnishers, shoemakers'	Dec. 12, 1865.
46,889	Eggleston, Charles H.	Marshall, Mich	Seeding machines	Mar. 21, 1865.
2,183	Egleston, Leonard, assignor to Rumsey & Co	Seneca Falls, N. Y	Pump, cistern or well, stock of a (Design)	Oct. 10, 1865.
50,344	Eiben, John C	New York, N. Y	Cans, sheet-metal	Oct. 10, 1865.
46,552	Eickemeyer, Rudolph	Yonkers, N. Y	Hat bodies, machine for pouncing and napping	Feb. 28, 1865.
46,553	Eickemeyer, Rudolph	Yonkers, N. Y	Hat bodies, machines for stretching	Feb. 28, 1865.
49,512	Ekstrand, G., and M. P. Cassel	Wataga, Ill	Cultivators	Aug. 22, 1865.
	Elder, H. L., and S. H. Kennedy. (*See* Fields and Townsend, assignors) Reissue.			
	Elder, H. L., and S. H. Kennedy. (*See* Fields and Townsend, assignors.) Reissue.			
48,763	Elder, James	Carthage, Ill	Whiffletrees	June 13, 1865.
	Eldredge, E. H., *et al.* (*See* Gray, Joshua, assignor.)			
	Eldredge, E. H., *et al.* (*See* Gray, Joshua, assignor.)			
46,890	Eldridge, David	Philadelphia, Pa	Fly-wheels. (Antedated March 6, 1865)	Mar. 21, 1865.
49,614	Eldridge, David	Philadelphia, Pa	Gearing belt, anti-friction wheels for. (Antedated Aug. 13, 1865.	Aug. 29, 1865.
51,028	Eldridge, John	West Buxton, Me	Pumps. (Antedated July 17, 1865.)	Nov. 21, 1865.
47,096	Eley, Philip	New York, N. Y	Baskets, protector for	Apr. 4, 1865.
45,984	Eliaers, A	Boston, Mass	Stud, elastic, for doors	Jan. 24, 1865.
50,345	Elleman, James	Providence, R. I	Buckles, shoe	Oct. 10, 1865.
	Ellerby, John. (*See* Moore, Thomas, assignor.)			

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
51,029	Ellinwood, Harrison C	Garretsville, Ohio	Saws, pitman for. (Antedated November 18, 1865)	Nov. 21, 1865.
	Elliot Felting Mills. (*See* Waite, Enoch, assignor.)			
51,574	Elliot, J. W	Leicester, Mass	Stoves, fire-lighting attachments for	Dec. 19, 1865.
46,225	Elliot, Wm. H	Plattsburg, N. Y	Fire-arms, revolving	Feb. 7, 1865.
47,372	Elliot, Wm. H.	Plattsburg, N. Y	Fire-arms, breech-loading	Apr. 18, 1865.
47,529	Elliot, Wm. H	Plattsburg, N. Y	Stoves, kerosene	May 2, 1865.
47,530	Elliot, Wm. H	Plattsburg, N. Y	Pumps, oil	May 2, 1865.
47,707	Elliot, Wm. H	Plattsburg, N. Y	Fire-arms, revolving, cylinder pin for	May 16, 1865.
47,809	Elliot, Wm. H	Plattsburg, N. Y	Fire-arms, breech-loading	May 23, 1865.
50,232	Elliot, Wm. H	Ilion, N. Y	Fire-arms, many-barrelled	Oct. 3, 1865.
1,936	Elliot, Wm. H	Plattsburg, N. Y	Fire-arms, revolving (Reissue)	Apr. 18, 1865.
1,937	Elliot, Wm. H	Plattsburg. N. Y	Fire-arms, revolving (Division 2, of reissue)	Apr. 18, 1865.
1,938	Elliot, Wm. H	Plattsburg, N. Y	Fire-arms, revolving (Division 3, of reissue)	Apr. 18, 1865.
51,440	Elliot, Wm. H	Ilion, N. Y	Fire-arms, many-barrelled	Dec. 12, 1865.
	Elliott, Wm. P., and Thomas J. Olsaver. (*See* Olsaver & Elliott.)			
48,056	Ellis, Darwin, and George R. Stetson	New Haven, Ct	Cartridges, machines for attaching balls to	June 6, 1865.
46,457	Ellis, John R	Comp. F, 22d reg't, Wis	Engines, rotary	Feb. 21, 1865.
48,801	Ellison, James	Boston, Mass	Boot and shoe holder	July 18, 1865.
49,736	Ells, B. F	Dayton, Ohio	Paper bags, machine for making	Sept. 5, 1865.
48,918	Ells, Josiah W	Pittsburg, Pa	Iron, sheet, annealing and polishing. (Antedated July 12, 1865)	July 25, 1865.
50,569	Elmer, Albert E	Springfield, Mass	Dampers	Oct. 24, 1865.
51,030	Elmer, Charles R	Philadelphia, Pa	Mill-stone pick	Nov, 21, 1865.
45,915	Elmer, William	New York, N. Y	Gas, illuminating, manufacture of. (Patented in France December 5, 1864.)	Jan. 17, 1865.
2,088	Elmore, M. H	Buffalo, N. Y	Stand, music (Design)	June 13, 1865.
50,105	Eltinge, Edgar	Kingston, N. Y	Lamp chimneys, moulding	Sept. 26, 1865.
	Elvans, John R., *et al.* (*See* Bryant, Wm. M., assignor.)			
46,650	Elwell, Henry H	South Norwalk, Ct	Latches	Mar. 7, 1865.
49,513	Elwell, William	Gardiner, Me	Earth pulverizer	Aug. 22, 1865.
	Ely, Alfred B. (*See* Gwynn, Stuart, assignor.)			
	Ely, Alfred B. (*See* Ballou, Francis D., assignor.)			
	Ely, Alfred B. (*See* Ballou, Francis D., assignor.)			
	Ely, Alfred B. (*See* Brown, J. H., assignor.)			
	Ely, Alfred B. (*See* Fessenden, Abijah, assignor.) Reissue.			
51,575	Ely, Dan. J	Acton, Ind	Planters, corn	Dec. 19, 1865.
49,246	Ely, J. Olden	Philadelphia, Pa	Knives, table	Aug. 8, 1865.
45,914	Embree, Davis	Dayton, Ohio	Boilers, method of removing incrustation from	Jan. 17, 1865.
	Emerick, D. B., and E. Pincus. (*See* Pincus & Emerick.)			
	Emerson, E., *et al.* (*See* Pratt, Ira C., assignor.)			
	Emerson, George, and Abram J. Gibson. (*See* Gibson & Emerson.)			
50,989	Emerson, James, assignor to self and Charles D. McDonald	Lowell, Mass	Sewing machines for working button-holes	Nov. 14, 1865.
49,868	Emerson, J. E	Trenton, N. J	Saws, saw-teeth for	Sept. 12, 1865.
46,092	Emery, A. H	New York, N. Y	Turpentine, spirits of, oil, rosin, and other products from pine wood, obtaining.	Jan. 31, 1865.
49 247	Emery, A. H	New York, N. Y	Acid, pyroligneous, manufacture of	Aug. 8, 1865.

49,248	Emery, A. H	New York, N. Y	Pitch, manufacture of	Aug. 8, 1865.
49,249	Emery, A. H	New York, N. Y	Turpentine, &c., manufacture of	Aug. 8, 1865.
49,990	Emery, Charles A	Springfield, Mass	Clutch or rope holder	Sept. 19, 1865.
47,284	Emery, Charles E	Brooklyn, N. Y	Valves, slide, balanced	Apr. 18, 1865.
45,821	Emery, Charles W	Dorchester, Mass	Animals, machines for clipping hair or wool from	Jan. 10, 1865.
46,226	Emery, Charles W	Dorchester, Mass	Animals, machines for clipping hair or wool from	Feb. 7, 1865.
48,709	Emery, Charles W	Dorchester, Mass	Pipe coupling	July 11, 1865.
46,093	Emery, Felix J	Springfield, Ill	Eave troughs	Jan. 31, 1865.
47,626	Emery, William B	Albany, N. Y	Gins, cotton. (Antedated May 5, 1865.)	May 9, 1865.
46,094	Emlen, Samuel	Philadelphia, Pa	Sweeping machine, street	Jan. 31, 1865.
45,954	Emmanuel, Charles	France	Astronomical instruments	Jan. 17, 1865.
48,386	Enders, Joseph	Louisville, Ky	Carriage tops	June 27, 1865.
51,556	Enders, V	New York, N. Y	Padlocks	Dec. 19, 1865.
46,227	Engelskirken, Charles	Buffalo, N. Y	Lanterns	Feb. 7, 1865.
50,106	English, B. C	Springfield, Mass	Knife, tweezers, and ear-spoon combined	Sept. 26, 1865.
47,063	English, Nathan F., assignor to self and Joseph N. Ladd	Hartland Four Corners, Vt.	Photographic printing frame	Mar. 28, 1865.
47,895	Ennis, William, assignor to self and Osborne Macdaniel	New York, N. Y	Stoves, &c., fire-pots for	May 23, 1865.
47,404	Ennis, William, and Henry J. Bosworth	Hudson, Mich	Sawing machines	Apr. 25, 1865.
	Enoch, William, and B. Holtz. (*See* Holtz & Enoch.)			
51,161	Ensign, Charles A	Naugatuck, Conn	Rubber, India, fabrics, mode of making binding for	Nov. 28, 1865.
	Ensign, Fred'k G., and Q. H. Wilhelm. (*See* Wilhelm & Ensign.)			
47,001	Erdmann, Daniel R	Philadelphia, Pa	Drills, boring	Mar. 28, 1865.
49,737	Erdmann, Daniel R	Philadelphia, Pa	Cars from the track, device for removing	Sept. 5, 1865.
46,651	Erving, Luther	Brooklyn, N. Y	Stove, gas	Mar. 7, 1865.
51,441	Erving, Luther	Brooklyn, N. Y	Stove, gas	Dec. 12, 1865.
	Erwin, John E., and E. W. Wilson. (*See* Wilson & Erwin.)			
46,096	Eshleman, J. Albert	Philadelphia, Pa	Neck-tie holders	Jan. 31, 1865.
48,667	Esler, James	Brooklyn, N. Y	Tools, boring, coupling for shafts of	July 11, 1865.
47,251	Espirat, M. A. and E. Sause	France	Filters. (Patented in France January 30, 1864.)	Apr. 11, 1865.
45,985	Estabrook, Edwin	Jersey City, N. J	Shells, explosive	Jan. 24, 1865.
45,986	Estabrook, Edwin	Jersey City, N. J	Shells, fuzes for	Jan. 24, 1865.
49,738	Estabrook, J. M	Worcester, Mass	Funnels, measuring	Sept. 5, 1865.
	Estell, Samuel F., and Joseph Ridge. (*See* Ridge & Estell.)			
49,950	Estes, Samuel, assignor through mesne assignments to C. O. Morse and Hiram Littlefield	Newburyport, Mass	Looms, let-off motion for	Sept. 12, 1865.
	Eustis, William T., *et al.* (*See* Halvorson, Halvor, assignor.)			
	Eustis, William T., *et al.* (*See* Halvorson, Halvor, assignor.)			
49,991	Euteneur, Jacob	Peoria Ill	Locks	Sept. 19, 1865.
48,802	Evans, Andrew A	Boston, Mass	Collar, shirt	July 18, 1865.
47,531	Evans, Charles, and William C. Bartlett	Morton, Ill	Grading scrapers	May 2, 1865.
	Evans, G. O. (*See* Porter, A. F., assignor.)			
	Evans, G. O., and W. S. Hassall. (*See* Foster, Charles E., assignor.)			
50,107	Evans, Hampton W	Philadelphia, Pa	Steam gauges	Sept. 26, 1865.
47,405	Evans, John	New Haven, Conn	Hammers, drop	Apr. 25, 1865.
48,803	Evans, Joseph	Newark, N. J	Pruning shears	July 18, 1865.
50,108	Evans, Joseph	Newark, N. J	Fibrous plants, machine for disintegrating	Sept. 26, 1865.
	Evans, Josiah D., *et al.* (*See* Collins, Evans & Smedley.)			
47,285	Evans, Turner	Paris, Iowa	Spinning machines, hand	Apr. 18, 1865.
47,406	Evans, W. R., and L. D. Benner	Thomaston, Maine	Pencil and eraser	Apr. 25, 1865.
	Evered, William, and D. E. Rice. (*See* Rice & Evered.)			
47,198	Everett, Alexander H	New York, N. Y	Iron, composition and manufacture of	Apr. 11, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Name of patentee.	Residence.	Invention or discovery.	Date.
48,483	Everett, Alexander H., assignor to American Car Wheel and Railway Manufacturing Company	New York, N. Y.	Iron, manufacture of	June 27, 1865.
50,698	Everett, Charles D	Cleveland, Ohio	Mail-bag receiver, railway	Oct. 31, 1865.
51,162	Everett, Charles D	Cleveland, Ohio	Mails and packages from railroad cars while in motion, method of delivering.	Nov. 28, 1865.
47,532	Everett, H	Philadelphia, Pa	Boxes, packages, &c., manufacture of	May 2, 1865.
47,939	Everett, Horace	Philadelphia, Pa	Cans or boxes, metal	May 30, 1865.
	Everhard, J. S., and Wm. A. Nixon. (*See* Morgan, J. C., assignor.)			
47,286	Faber, William L	New York, N. Y.	Ores, silver, process for working	Apr. 18, 1865.
47,407	Faber, William L	New York, N. Y.	Ores, copper, smelting	Apr. 25, 1865.
49,340	Fairbanks, Edward, assignor to self and Levi Bowen	Baltimore, Md	Oyster dredges	Aug. 8, 1865.
48,668	Fairbanks, Horatio	Boston, Mass	Sifter, flour	July 11, 1865.
2,201	Fairbanks, Lorenzo	Philadelphia, Pa	Desk, school (Design.)	Oct. 17, 1865.
	Fairbanks, R. G. (*See* Akins & Felthousen, assignors.) Reissue.			
48,866	Fairchild, L. S., assignor to self and G. F. French	Newton Falls, Ohio	Water-wheels	July 18, 1865.
48,484	Fairman, Henry B., assignor to Metropolitan Collar Company	New York, N. Y.	Button-holes	June 27, 1865.
	Falcon, Peter E. (*See* Fuller, George W., assignor.)			
49,026	Falcon, Peter E., assignor to self and George W. Fuller	Cohasset, Mass	Vessel, sunken, apparatus for discharging cargo of	July 25, 1865.
	Fales, J. E., *et al.* (*See* Ingram, James D., assignor.)			
49,739	Fales, Levi S	Boston, Mass	Petroleum, process of distilling	Sept. 5, 1865.
49,740	Fales, Levi S	Boston, Mass	Stills, method of setting	Sept. 5, 1865.
47,097	Fales, Samuel D	Central Falls, R. I	Cocks, screw-stem valve	Apr. 4, 1865.
50,884	Falkman, Carl Johann	Great Britain	Alcohol, apparatus for purifying	Nov. 7, 1865.
48,164	Fellows, James, assignor to Porter & Booth	Philadelphia, Pa	Spoons, sheet-metal	June 13, 1865.
49,471	Fellows, James, assignor to Porter & Booth	Philadelphia, Pa	Spoons, sheet-metal	Aug. 15, 1865.
47,533	Fanckboner, Abram	Schoolcraft, Mich	Mill, fanning	May 2, 1865.
51,163	Fanckboner, G. C	Schoolcraft, Mich	Harvesters	Nov. 28, 1865.
	Fanning, John T. (*See* Holly, Henry W., assignor.)			
	Fanton, Henry B. (*See* Bartram, Walker B., assignor.)			
46,095	Farciot, Charles O	Philadelphia, Pa	Canteen, plates, cup, and funnel	Jan. 31, 1865.
49,394	Farholtz, Ferdinand	Louisville, Ky	Pianos, repeating action for	Aug. 15, 1865.
47,627	Faries, Robert and Henry V	Indianapolis, Ind	Steam generators	May 9, 1865.
51,707	Farley, George W	Manchester, N. H	Drills, grain	Dec. 26, 1865.
48,669	Farley, Henry W	Hannibal, Mo	Excavator	July 11, 1865.
49,741	Farmer, David J	Newark, N. J	Skate	Sept. 5, 1865.
47,287	Farmer, John P., jr	Cambridge, Mass	Skates	Apr. 18, 1865.
47,940	Farmer, Moses G., and	Salem, Mass	Telegraphs, line wires for	May 30, 1865.
	George F. Milliken	Boston, Mass		
51,442	Farmer, Moses G., and	Salem, Mass	Thermo-electric batteries	Dec. 12, 1865.
	H. Julius Smith	Boston, Mass		
27,708	Farnsworth, Thomas	Cleveland, Ohio	Mangle	May 16, 1865.
50,109	Faron, Edward	New York, N. Y	Steam generators	Sept. 26, 1865.
47,002	Farr, Ransom	Chesterfield, N. H	Water-pipes, connections for	Mar. 28, 1865.
49,742	Farrar, Benjamin F	Springfield, Mass	Railroad rail	Sept. 5, 1865.
	Farrar, William H. (*See* Oliver, Thomas O., assignor.)			

46,228	Farrel, John	New York, N. Y	Safes, fire-proof	Feb. 7, 1865.
48,919	Farrel, John	New York, N. Y	Lock, safe	July 25, 1865.
46,652	Fasoldt, Charles	Albany, N. Y	Chronometer escapements	Mar. 7, 1865.
	Fassler, Jerome, *et al.* (*See* Whiteley, Fassler & Kelly.)			
47,288	Fassman, E. Victor	New Orleans, La	Bales, cotton, hoop-locks for	Apr. 18, 1865.
50,067	Faught, Lemuel P., assignor to self and William T. Cook	Foxboro', Mass	Brush, paint	Sept. 19, 1865.
48,235	Faure, Cyprien, assignor to self and Henry J. Yates	New York, N. Y	Hats, machine for brushing	June 13, 1865.
51,708	Fawcett, William	New York, N. Y	Stirrup, fastening, safety	Dec. 26, 1865.
45,987	Fawkes, J. W	Decatur, Ill	Cultivator	Jan. 24, 1865.
49,250	Fawkes, J. W	Decatur, Ill	Planters, corn	Aug. 8, 1865.
49,514	Fay, George M	Eureka, Cal	Centre-board	Aug. 22, 1865.
	Fay, J. A., & Co. (*See* Doane, William H., assignor.)			
	Fay, Sidney G. (*See* Belser, James H., assignor.)			
48,350	Fearon, Francis	England	Sound, apparatus for deadening	June 20, 1865.
48,804	Fecker, Joseph	Cavetown, Md	Saw-mills	July 18, 1865.
48,267	Fee, John S	Felicity, Ohio	Umbrellas	June 20, 1865.
46,891	Feldman, Julius	New York, N. Y	Bolt for doors and shutters	Mar. 21, 1865.
48,387	Felker, Valentine	Carmel, Maine	Ploughs	June 27, 1865.
47,289	Fell, Thomas M	New York, N. Y	Pumps, mine. (Antedated April 7, 1865)	Apr. 18, 1865.
47,003	Fellows, Alfred	Maquoketa, Iowa	Boats, steam, propulsion of	Mar. 28, 1865.
	Fellows, B. F., and E. Smith. (*See* Saunders, Abiel F., assignor.)			
	Felthousen, J. D., and W. H. Akins. (*See* Akins & Felthousen.) Reissue.			
	Felthousen, J. D., and W. A. Akins. (*See* Akins & Felthousen.) Extension.			
50,463	Fenner, A. R	Cold Brook, N. Y	Saw-sets	Oct. 17, 1865.
45,705	Fenstermacher, William	Shippensburg, Pa	Clod-crushers. (Antedated March 7, 1864)	Jan. 3, 1865.
48,541	Fenton, Horace	Cleveland, Ohio	Boats, river and canal, propelling wheel for	July 4, 1865.
	Fenwick, Robert W., *et al.* (*See* Labin, H. W., ass'r.) Reissue.			
	Fenwick, Robert W., *et al.* (*See* Labin, H. W., ass'r.) Reissue.			
	Fenwick, Robert W., *et al.* (*See* Labin, H. W., ass'r.) Reissue.			
	Fenwick, Robert W., *et al.* (*See* Labin, H. W., ass'r.) Reissue.			
	Ferguson, C. J. (*See* Mont Storm, William assignor.)			
50,233	Ferguson, J. H	Springfield, Mass	Lubricator	Oct. 3, 1865.
46,892	Ferguson, John S	Poughkeepsie, N. Y	Jacquard for weaving three-ply fabrics	Mar. 21, 1865.
	Ferguson, Kilby, and John M. Merrymon. (*See* Merrymon & Ferguson.)			
51,031	Fernald, John	Frankfort, Ind	Cultivators	Nov. 21, 1865.
	Fernie, Kimball. (*See* Tyrrell, Alexander, assignor.)			
	Ferris, Charles, *et al.* (*See* Southworth, Daniel H., assignor.)			
51,106	Ferris, John Pardoe	England	Engines, steam, lubricators for	Nov. 21, 1865.
46,229	Fessel, H. E., and F. Krautwadel	Chicago, Ill	Hammers, trip	Feb. 7, 1865.
2,085	Fessenden, Abijah, assignor to Alfred B. Ely	Boston, Mass	Tobacco pipe (Reissue)	Oct. 10, 1865.
50,346	Fichet, L. V	New York, N. Y	Steam superheaters	Oct. 10, 1865.
47,290	Fickett, William S	Rochester, N. Y	Drill, rock, apparatus	Apr. 18, 1865.
45,916	Fickey, Frederick, jr., assignor to William H. Fickey	Baltimore, Md	Pipes, smoking	Jan. 17, 1865.
47,098	Fiegel, Remy	Montgomery county, Pa	Railroad draught bars	Apr. 4, 1865.
47,408	Field, Austin W	Vergennes, Vt	Jacks, carriage	Apr. 25, 1865.
	Field, A. W., *et al.* (*See* Swan, Thomas, assignor.)			
49,992	Field, Ben., and George M. Pullman	Albion, N. Y Chicago, Ill	Cars, sleeping	Sept. 19, 1865.
50,201	Field, B. F., assignor to self and E. T. Bond	Sheboygan Falls, Wis	Seeding machine	Sept. 26, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
50,202	Field, B. F., assignor to self and E. T. Bond	Sheboygan Falls, Wis	Planter, potato, seeder and cultivator, combined	Sept. 26, 1865.
48,920	Field, Edward A	Sidney, Maine	Scrapers, road	July 25, 1865.
50,925	Field, Edward A	Sidney, Maine	Bale-hoop strainer	Nov. 14, 1865.
51,709	Field, Edward A	Sidney, Maine	Presses, hay	Dec. 26, 1865.
50,110	Field, Francis, deceased, by Eliza J. Field, executrix	Waltham, Mass	Composition for cleaning the teeth	Sept. 26, 1865.
51,110	Field, Henry, jr., assignor to self and New Bedford Copper Company.	New Bedford, Mass	Vessels, sheathing for	Nov. 21, 1865.
46,197	Field, John Lyon	Lambeth, England	Candles, moulded, manufacture of	Jan. 31, 1865.
48,621	Field, L. C., assignor, through mesne assignments, to J. P. Frost & Co.	Galesburg, Ill	Press, baling, beating device for	July 4, 1865.
49,193	Field, L. C., assignor to self, J. P. Frost, and W. S. Bellows	Galesburg, Ill	Press, beater	Aug. 1, 1865.
1,849	Fields, William, and J. Townsend, assignors to S. H. Kennedy and H. L. Elder.	Philadelphia, Pa	Tanning hides and skins (Reissue)	Jan. 10, 1865.
1,955	Fields, William, and J. Townsend, assignors to S. H. Kennedy and H. L. Elder.	Philadelphia, Pa	Tanning hides and skins (Reissue)	May 9, 1865.
51,577	Fifield, Levi W	New Hampton, N. H	Knitting-machine needles	Dec. 19, 1865.
47,628	Fink, Reuben	Batavia, Ill	Jacks, carriage	May 9, 1865.
48,057	Finkle, Milton	New York, N. Y	Looms, heddle frames for	June 6, 1865.
49,251	Finkle, Milton	New York, N. Y	Loom harness, wire heddles for	Aug. 8, 1865.
47,534	Finley, James R	Delphi, Ind	Ploughs, cultivator	May 2, 1865.
	Finzel, C. W., and E. Beanes. (*See* Beanes & Finzel.)			
49,743	Fisher, C. J	Waukon, Iowa	Collars, horse. (Antedated August 27, 1865)	Sept. 5, 1865.
47,004	Fisher, Char'es R	Chelsea, Mass	Vessels, navigable, connection of the gaff to the mast of	Mar. 28, 1865.
49,869	Fisher, Cyrus	Leesville, Ohio	Trees, fruit, &c., method of preventing insects from injuring	Sept. 12, 1865.
50,926	Fisher, Henry	Canton, Ohio	Brush, fly, for tables	Nov. 14, 1865.
49,194	Fisher, assignor to C. Aultman & Co	Canton, Ohio	Reaping machines	Aug. 1, 1865.
51,111	Fisher, assignor to C. Aultman & Co	Canton, Ohio	Harvesters, rake attachments to	Nov. 21, 1865.
49,098	Fisher, J. Hyde	Chicago, Ill	Refrigerator, or house for preserving animal and vegetable substances.	Aug. 1, 1865.
50,810	Fisher, John B	Cincinnati, Ohio	Washing machine	Nov. 7, 1865.
49,252	Fisher, John J. G	Foxboro', Mass	Straps, clamp for	Aug. 8, 1865.
49,615	Fisher, Simeon L	Brimfield, Ill	Gates	Aug. 29, 1865.
48,388	Fisher, W. A	Lower Merion, Pa	Wells, artesian, boring	June 27, 1865.
47,709	Fisher, William C	Charlestown, Mass	Supporter, sash	May 16, 1865.
	Fisk, Almond D., deceased, by Phebe Ann Fisk, executrix	Chazy, N. Y	Coffins (Extension)	May 15, 1865.
51,578	Fisk, Earl I	South Byron, N. Y	Cigar machines	Dec. 19, 1865.
45,917	Fisk, John S., and James Westerman	Meadville, Pa Sharon, Pa	Coal-mining machine	Jan. 17, 1865.
45,918	Fisk, John S., and James Westerman	Meadville, Pa Sharon, Pa	Ventilating mines, mode of	Jan. 17, 1865.
49,472	Fiske, Horatio, assignor to self and Alfred Morse	Farnumsville, Mass	Looms, let-off for	Aug. 15, 1865.
	Fitch, John A., and Henry Baxter. (*See* Gibson, Wm., assignor.)			
	Fitch, J. P., and J. R. Van Vechten. (*See* Powers, Timothy J., ass'r.)			
	Fitch, J. P., *et al.* (*See* Powers, Timothy J., assignor.)			
51,164	Fitch, Samuel S	New York, N. Y	Cooking, washing, &c., apparatus for	Nov. 28, 1865.

47,005	Fithian, Lemuel S	Rahway, N. J	Ploughs, rotary, traction wheels for	Mar. 28, 1865.
46,048	Fithian, Lemuel S., assignor to self and John Young	Absecom, N. J	Soil, machine for pulverizing the	Jan. 24, 1865.
48,921	Fitts, Abraham	Worcester, Mass	Steam whistle	July 25, 1865.
48,670	Fitts, George W	South Hampton, N. H	Corn-shellers	July 11, 1865.
47,941	Fitts, R. B	Philadelphia, Pa	Marl, process for treating and compounding	May 30, 1865.
45,706	Fitzgerald, Elisha	New York, N. Y	Dough, apparatus for aerating	Jan. 3, 1865.
	Fitzgerald, L. R., *et al.* (*See* Deltour, William, assignor.)			
45,919	Fitzgerald, Walter	Boston, Mass	Fire-arms, magazine or self-loading	Jan. 17, 1865.
50,570	Fitzgerol, Pleasant	Newport, Ky	Mills, sugar	Oct. 24, 1865.
47,006	Fitzki, Edward	Philadelphia, Pa	Sandal, ice	Mar. 28, 1865.
46,787	Fitzpatrick, J. C. S	Kalamazoo, Mich	Time-indicators for railroad trains	Mar. 14, 1865.
49,616	Fitzpatrick, Michael J., and Benjamin Barker	New York, N. Y	Punch	Aug. 29, 1865.
49,395	Flagg, Ira C. and F. W	Middletown, Ct	Rowlock	Aug. 15, 1865.
51,032	Flagg, Ira C. and F. W	Middletown, Ct	Rowlock	Nov. 21, 1865.
2,091	Flagg, Ira C. and F. W	Middletown, Ct	Rowlock (Reissue)	Oct. 17, 1865.
48,542	Flagg, James H	Perkinsville, Vt	Stoves, soap-stone corner or joint for	July 4, 1865.
50,699	Flagg, Lysander, and George D. Briggs	Pawtucket, R. I	Watch, toy	Oct. 31, 1865.
50,347	Flanagin, Isaac D	Ceresco, Mich	Whiffletrees	Oct. 10, 1865.
46,458	Flanders, Moses R	Ilion, N. Y	Scythe-fastenings	Feb. 21, 1865.
	Flather, Henry, and W. F. Wilson. (*See* Wilson & Flather.)			
	Flax Leather Manufacturing Co. (*See* Waite, W. W., assignor.)			
45,793	Fleischman, Joseph, assignor to self and Aloes Fleischman	New York. N. Y	Process of preparing grain for distillation	Jan. 3, 1865.
50,811	Fleming, H. H	Kokomo, Ind	Car-coupling	Nov. 7, 1865.
51,033	Fleming, H. H	Kokomo, Ind	Collar, horse, fastening	Nov. 21, 1865.
48,710	Fletcher, Addison C	New York, N. Y	Condensers	July 11, 1865.
48,922	Fletcher, Addison C	New York, N. Y	Bag-fasteners	July 25, 1865.
48,058	Fletcher, A. V. and A. F	Athol, Mass	Stove-pipe dampers	June 6, 1865.
49,615	Fletcher, Benjamin S	Cornish, N. H	Inkstand	Aug. 29, 1865.
50,234	Fletcher, Benjamin S	Cornish Flats, N. H	Washing machine	Oct. 3, 1865.
47,535	Fletcher, Darius G	Racine, Wisconsin	Radiator, heat	May 2, 1865.
51,165	Fletcher, Matthew	Louisville, Ky	Engines, steam, rotary	Nov. 28, 1865.
	Fletcher, Veron, and Joseph H. Laning. (*See* Laning & Fletcher.)			
50,571	Fleury, Huot	New York, N. Y	Petroleum, distilling	Oct. 24, 1865.
46,097	Fliedner, F. W	New York, N. Y	Boxes, manufacturing of	Jan. 31, 1865.
50,068	Flinn, Darwin P., assignor to William S. Miller	Geneva, N. Y	Paint compound	Sept. 19, 1865.
51,532	Flood, J. M	Fulton, Mo	Spinning wheels	Dec. 12, 1865.
2,120	Florcy, Orlando V	Yellow Springs, Ohio	Vices for carpenters' use (Reissue)	Dec. 19, 1865.
51,034	Floyd, Albion P	Niagara Falls, N. Y	Bolt, door	Nov. 21, 1865.
48,543	Floyd, Edward A	Macomb, Ill	Pumps, escape valves for	July 4, 1865.
49,993	Floyd, John G	Keokuk, Iowa	Lamp chimneys	Sept. 19, 1865.
48,544	Foard, J. W	San Francisco, Cal	Shoemakers' floats	July 4, 1865.
49,744	Foard, J. W	San Francisco, Cal	Paperholder	Sept. 5, 1865.
1,853	Focht, George	Reading, Pa	Blocks, tackle, attachment for (Reissue)	Jan. 17, 1865.
46,459	Fogerty, Valentine	Boston, Mass	Fire-arms, magazine	Feb. 21, 1865.
46,343	Fogg, Charles W	Waltham, Mass	Watches	Feb. 14, 1865.
48,545	Folger, H. G	Wadsworth, Ohio	Clothes-wringer	July 4, 1865.
45,707	Follett, John M	Atkinson, Ill	Seeding machines. (Antedated May 14, 1862)	Jan. 3, 1865.
46,098	Folsom, Arthur	New York, N. Y	Coffer-dam	Jan. 31, 1865.
	Folsom, John G., and Daniel R. Day. (*See* Day & Folsom.)			
2,164	Foote, Charles Y	Bristol, Conn	Clock case (Design)	Sept. 12, 1865.
46,788	Foote, E. N	New England Village, Mass	Locket, miniature	Mar. 14, 1865.
51,035	Forbes, Alexander, and John Macbeth	Cleveland, Ohio	Refrigerator	Nov. 21, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
1,967	Forbush, C. B., assignor through mesne assignments to Cyrenus Wheeler, jr.	Poplar Ridge, N. Y.	Harvesters (Reissue)	May 23, 1865.
1,968	Forbush, C. B., assignor through mesne assignments to Cyrenus Wheeler, jr.	Poplar Ridge, N. Y.	Harvesters (Division B of reissue)	May 23, 1865.
1,969	Forbush, C. B., assignor through mesne assignments to Cyrenus Wheeler, jr.	Poplar Ridge, N. Y.	Harvesters (Division C of reissue)	May 23, 1865.
1,970	Forbush, C. B., assignor through mesne assignments to Cyrenus Wheeler, jr.	Poplar Ridge, N. Y.	Harvesters (Division D of reissue)	May 23, 1865.
1,971	Forbush, C. B., assignor through mesne assignments to Cyrenus Wheeler, jr.	Poplar Ridge, N. Y.	Harvesters (Division E of reissue)	May 23, 1865.
1,972	Forbush, C. B., assignor through mesne assignments to Cyrenus Wheeler, jr.	Poplar Ridge, N. Y.	Harvesters (Reissue)	May 23, 1865.
1,973	Forbush, C. B., assignor through mesne assignments to Cyrenus Wheeler, jr.	Poplar Ridge, N. Y.	Harvesters (Division B of reissue)	May 23, 1865.
1,974	Forbush, C. B., assignor through mesne assignments to Cyrenus Wheeler, jr.	Poplar Ridge, N. Y.	Harvesters (Division C of reissue)	May 23, 1865.
1,975	Forbush, C. B., assignor through mesne assignments to Cyrenus Wheeler, jr.	Poplar Ridge, N. Y.	Harvesters (Division D of reissue)	May 23, 1865.
47,536	Ford, C.	Forest City, Ill	Ploughs, shovel	May 2, 1865.
47,007	Ford, Frederic G.	Washington, D. C.	Caster for furniture	Mar. 28, 1865.
47,537	Ford, Frederic G.	Washington, D. C.	Lock, window	May 2, 1865.
	Ford, John P., and James Ball. (*See* Ball & Ford.)			
1,951	Foreman, B. S.	Morrison, Ill.	Wood railroad ties, method of preserving (Reissue)	May 9, 1865.
51,036	Forsyth, James B.	Roxbury, Mass.	Rubber, India, apparatus for curing	Nov. 21, 1865.
51,278	Fortun, Joaquin	Cuba	Cars, railroad, mode of attaching stakes to	Nov. 21, 1865.
46,653	Fosdick, Samuel W., and A. C. Dakin	Clinton, Mass	Latch for doors	Mar. 7, 1865.
51,779	Fosket, William, assignor to the Meriden Cutlery Company	Meriden, Conn.	Knives, machinery for grinding	Dec. 26, 1865.
49,618	Foss, John F.	Lowell, Mass	Motion, converting reciprocating into rotary. (Antedated August 28, 1865.)	Aug. 29, 1865.
48,671	Fostensen, Christian, Hans Iverson, and Charles J. Skow	Racine, Wis.	Bedstead, camp	July 11, 1865.
48,165	Foster, A. D.	Jordan, N. Y.	Pumps	June 13, 1865.
	Foster, Andrew J. (*See* Bugbee, Alpheus, assignor.)			
48,546	Foster, A. K.	Hallettsville, Texas	Saw gummer	July 4, 1865.
46,420	Foster, Chas. E., ass'r to the Rock Drill Manufac'ng and Mining Co.	Philadelphia, Pa.	Well-boring apparatus	Feb. 14, 1865.
46,844	Foster, Charles E., assignor to the Rock Drill Manufacturing and Mining Company.	Philadelphia, Pa.	Well-boring apparatus	Mar. 14, 1865.
46,908	Foster, Charles E., assignor through mesne assignments to G. O. Evans and W. S. Hassall.	Philadelphia, Pa.	Wells, boring	Mar. 21, 1865.
46,344	Foster, Clinton	Prairie City, Ill.	Seeding machine	Feb. 14, 1865.
48,923	Foster, D. P.	Shelburne Falls, Mass.	Grate for cooking stoves	July 25, 1865.
49,994	Foster, George P. and George F	Mohawk, N. Y.	Cartridge, retractors, for breech-loading fire-arms	Sept. 19, 1865.
49,253	Foster, James A	West Stockholm, N. Y.	Legs, artificial	Aug. 8, 1865.
	Foster, J. D. (*See* Burdick, A. R., assignor.)			
45,708	Foster, John W.	Washington, D. C.	Stamp, cancelling	Jan. 3, 1865.
1,871	Foster, John W.	Washington, D. C.	Stamp, cancelling (Reissue)	Feb. 14, 1865.

51,166	Foster, Joseph S.	Virginia, Nevada	Engines, revolving cylinder	Nov. 28, 1865.
49,341	Foster, Junius, assignor to self and John Slocum	Long Branch, N. J.	Spoke machines	Aug. 8, 1865.
51,112	Foster, Samuel E., assignor to the Putnam Machine Company	Fitchburg, Mass.	Engines, steam lubricators for	Nov. 21, 1865.
	Foster, William. (*See* Ganster, George P., assignor.)			
50,668	Foubert, A. A., and J. Bequet	England France	Alcohol, apparatus for rectifying	Oct. 24, 1865.
46,099	Foulley, L. A.	Boston, Mass.	Photographs, apparatus for cutting	Jan. 31, 1865.
48,335	Fountain, J. L., assignor to self and A. Fountain	New Milford, Ill.	Harvesting machines	June 20, 1865.
	Fowle, Joseph W.	Boston, Mass.	Drilling machines, steam (Extension)	Mar. 6, 1865.
	Fowle, J. W., and William Henderson. (*See* Henderson and Fowle.			
51,167	Fowler, A. H., and E. J. Morgan	Ithaca, N. Y.	Wells, deep, packing	Nov. 28, 1865.
51,259	Fowler, B. M., assignor to self and William Hanagin	Hackensack, N. J.	Compound, meat	Nov. 28, 1865.
49,586	Fowler, De G. and Herbert E., assignors to Henry B. Goodyear	Wallingford, Conn.	Screws, iron, tinning and plating	Aug. 22, 1865.
	Fowler, De Grass, and Herbert E. and Robert Wallace. (*See* Wallace and Fowler.)			
1,869	Fowler, F. F.	Crane Township, Ohio	Elevators, hay (Reissue)	Feb. 14, 1865.
1,870	Fowler F. F.	Crane Township, Ohio	Elevators, hay (Division of reissue)	Feb. 14, 1865.
	Fowler, Henry R. (*See* McEwen, Ezra, assignor.)			
45,892	Fowler, John, jr., assignor to William P. Tatham	England	Cultivating land by steam	Jan. 10, 1865.
49,619	Fowler, Joseph	Watertown, Wis.	Stove-pipes, damper for	Aug. 29, 1865.
47,008	Fowler, Joseph, and F. M. Bacon	Watertown, Wis.	Cultivator teeth, hanging	Mar. 28, 1865.
47,009	Fowler, Joseph, and F. M. Bacon	Watertown, Wis.	Seeding machine	Mar. 28, 1865.
46,230	Fowler, Nathaniel C.	Yarmouth, Mass.	Aluminum with vulcanite and other materials, combining	Feb. 7, 1865.
46,345	Fowler, Nathaniel C.	Yarmouth Port, Mass.	Teeth, artificial	Feb. 14, 1865.
46,346	Fowler, Nathaniel C.	Yarmouth Port, Mass.	Teeth, artificial	Feb. 14, 1865.
46,347	Fowler, Nathaniel C.	Yarmouth, Mass.	Aluminum with vulcanite, combination of alloys of	Feb. 14, 1865.
47,291	Fownes, Charles	Pittsburg, Pa.	Stove	Apr. 18, 1865.
50,700	Fox, George H.	Boston, Mass.	Shaft coupling	Oct. 31, 1865.
48,166	Fox, George J.	Boston, Mass.	Valves, steam regulator	June 13, 1865.
	Fox, George K. (*See* Lawrence, M. D., assignor.)			
47,409	Fox, Jacob	Philadelphia, Pa.	Coal-breaker	Apr. 25, 1865.
47,810	Fox, John	Philadelphia, Pa.	Barrels, petroleum, composition for lining	May 23, 1865.
49,099	Fox, Leander	New York, N. Y.	Currency notes, mutilated, diagram for testing the value of	Aug. 1, 1865.
45,822	Fox, Samuel L.	Philadelphia, Pa.	Tube, packing	Jan. 10, 1865.
49,870	Foye, Nathaniel W.	Cambridge, Mass.	Sifter, flour	Sept. 12, 1865.
	Fradley, Frederick, and William Avens. (*See* Avens & Fradley.)			
51,301	Frailey, Henry L.	Lancaster, Pa.	Mowing machines	Dec. 5, 1865.
47,199	Frances, George W., and William L. Woods	Washington, D.C.	Tobacco pipe	Apr. 11, 1865.
46,556	Frances, Lewis	New York, N. Y.	Barrels for petroleum, &c., composition for lining. (Antedated November 21, 1864.)	Feb. 28, 1865.
1,885	Francis, L., assignor to self and C. H. Loutrel	New York, N. Y.	Composition of matter (Reissue)	Feb. 28, 1865.
1,886	Francis, L., assignor to self and C. H. Loutrel	New York, N. Y.	Composition of matter (Reissue)	Feb. 28, 1865.
1,887	Francis, L., and F. W. Litmate, assignors to L. Francis and C. H. Loutrel.	New York, N. Y.	Composition of matter (Reissue)	Feb. 28, 1865.
48,389	Francis, Samuel Ward	New York, N. Y.	Stamps, postage and revenue	June 27, 1865.
	Francisco, Elon. (*See* Travis, John E., assignor.)			
46,654	Francisco, Henry	Lake Mills, Wis.	Cultivators, teeth for	Mar. 7, 1865.
	Frank, F., and J. Stuber. (*See* Stuber & Frank.) Reissue.			
	Frankfurth, William, and Edward Mackwitz. (*See* Mackwitz and Fraukfurth.)			
46,555	Frary, James D.	New Britain, Conn.	Faucet for oil and other liquids	Feb. 28, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Fraser, D. R., and P. W. Gates. (*See* Gates & Fraser.)			
	Fraser, D. R., and P. W. Gates. (*See* Gates & Fraser.)			
47,410	Fraser, J	Buffalo, N. Y	Treating oil wells to remove paraffine, tar, &c., mode of	Apr. 25, 1865.
49,995	Fraser, J	Buffalo, N. Y	Wells, oil, for the removal of paraffine, method of treating	Sept. 19, 1865.
50,348	Fraser, J., and James Calkins	Buffalo, N. Y	Petroleum, tanks for storing	Oct. 10, 1865.
	Fraser, J., and James Calkins. (*See* Calkins & Fraser.)			
51,302	Frazee, Benjamin	Belleville, N. J	Pumps	Dec. 5, 1865.
51,168	Frazer, Charles P	Allowaystown, N. J	Saws, sharpening	Nov. 28, 1865.
	Frear, William H. (*See* Lloyd, Samuel, assignor.)			
48,672	Frederici, Carlos F	New York, N. Y	Distilling, apparatus for	July 11, 1865.
	Fredet, A. A., *et al.* (*See* Orioli, Fredet & Matussiere.)			
50,111	Freeborn, De Lancy	New York, N. Y	Pipe, gas, coupling	Sept. 26, 1865.
46,655	Freeland, John, and Daniel Ward	New York, N. Y	Springs, volute, making	Mar. 7, 1865.
45,988	Freeman, William H	Bloomfield, Iowa	Ploughs, gang	Jan. 24, 1865.
	Frémont, John C. (*See* Hamar, Alexander, assignor.)			
49,195	French, A. F., assignor to self and E. C. Terrell	Franklin, Vt	Cars, mode of starting	Aug. 1, 1865.
47,710	French, E. F	New York, N. Y	Huskers, corn	May 16, 1865.
49,027	French, E. F., assignor to self and E. C. Terrell	New York, N. Y	Shirt bosoms	July 25, 1865.
	French, G. F. (*See* Fairchild, L. S. assignor.)			
51,443	French, James M	East Cambridge, Mass	Bed bottoms, spring slats for	Dec. 12, 1865.
	French Self-fastening Button Company. (*See* Boynton, Edward S., assignor.)			
50,812	French, Thomas G	Jersey City, N. J	Crucible mould	Nov. 7, 1865.
48,924	Freudenburg, Henry	New York, N. Y	Skirts, hoop	July 25, 1865.
	Frey, Charles A., and Frederick Lang. (*See* Lang & Frey.)			
49,745	Frey, Jacob L	New York, N. Y	Sewing machines	Sept. 5, 1865.
46,460	Frey, Joseph	Battle Creek, Mich	Sawing machines	Feb. 21, 1865.
50,701	Frey, Lucas, and John Hahn	Chicago, Ill	Brush, scrubbing, mop and wringer	Oct. 31, 1865.
47,711	Frick, Jacob	Philadelphia, Pa	Fastening shutter	May 16, 1865.
49,620	Frick, Jacob	Philadelphia, Pa	File, newspaper	Aug. 29, 1865.
50,235	Fricker, Jacob	Cincinnati, Ohio	Fire plugs	Oct. 3, 1865.
	Friendenbach, F. M. (*See* Hafner, Joseph, assignor.)			
48,711	Fries, Alexander	Cincinnati, Ohio	Alcohol, &c., distillation of	July 11, 1865.
51,710	Frink, E. Otis	Indianapolis, Ind	Latch, gate	Dec 26, 1865.
51,711	Frink, Samuel C	Indianapolis, Ind	Hinge	Dec. 26, 1865.
48,336	Frisbie, Russell, assignor to Ira K. and Elmore Penfield	Middletown, Conn	Tackle, hook	June 20, 1865.
49,254	Frost, Edward J., and George A. Lawrence	Springfield, Mass	Lighters, gas, electric. (Antedated July 24, 1865)	Aug. 8, 1865.
	Frost, J. P., *et al.* (*See* Field, L. C., assignor.)			
	Frost, J. P., *et al.* (*See* Field, L. C., assignor.)			
48,764	Frost, W. E., assignor to J. Washburn and P. L. Moen	Worcester, Mass	Skirt wire, covered, sizing and finishing	July 11, 1865.
48,765	Frost, W. E., assignor to J. Washburn and P. L. Moen	Worcester, Mass	Skirt wire, covered, sizing and finishing	July 11, 1865.
48,766	Frost, W. E., assignor to J. Washburn and P. L. Moen	Worcester, Mass	Skirt wire, covered, sizing and finishing	July 11, 1865.
	Fry, Jeremiah T., and Amos Melot. (*See* Melot & Fry.)			
51,303	Fry, William T	Philadelphia, Pa	Flask	Dec. 5, 1865.
49,746	Frye, Jesse	Brooklyn, N. Y	Engine, traction, for common roads	Sept. 5, 1865.

45,989	Fuller, Dwight B	Buffalo, N. Y	Pumps, piston packing for	Jan. 24, 1865.
50,112	Fuller, Ensign C	Lowell, Mass	Kettle scraper	Sept, 26, 1865.
47,811	Fuller, George H	Pawtucket, R. I	Keys, watch, manufacturing	May 23, 1865.
	Fuller, George W. (*See* Falcon, Peter E., assignor.)			
49,342	Fuller, George W., assignor to self and Peter E. Falcon	Chelsea, Mass	Vessels, sunken, device for raising	Aug. 8, 1865.
51,652	Fuller, Jim B., assignor to self, J. P. Upham, and E. V. Rice	Claremont, N. H	Flax, machine for preparing	Dec. 19, 1865.
47,538	Fuller, Jim B., and James P. Upham	Claremont, N. H	Hemp, flax, &c., for spinning, preparing	May 2, 1865.
47,539	Fuller, Jim B., and James P. Upham	Claremont, N. H	Hemp, flax, &c., process for separating the fibres of. (Antedated April 18, 1865.)	May 2, 1865.
46,893	Fuller, Joseph G	New York, N. Y	Paper stock, engine for preparing	Mar. 21, 1865.
	Fuller, L. L., and William F. Perkins. (*See* Dunscomb, Edward, assignor.)			
47,598	Fuller, Robert P., assignor to Henry Richmond	Machias, Maine	Pulley block	May 2, 1865.
	Fuller, Warren & Co. (*See* Hathaway, David, assignor.) Design.			
47,368	Fuller, William C	Great Britain	Doors and windows, water-tight, method of rendering. (Patented in England February 16, 1864.)	Apr. 18, 1865.
48,547	Fulton, Andrew	Pittsburg, Pa	Piston packing	July 4, 1865.
49,396	Fulton, Isaac	Madison, Pa	Fodder, machine for cutting and grinding	Aug. 15, 1865.
50,236	Fulton, James	Zanesville, Ohio	Boot and shoe, wooden soled	Oct. 3, 1865.
47,099	Funnell, Henry	Huntington, N. Y	Trees, remedy for disease in	Apr. 4, 1865.
47,411	Furbush, C. O	Machias, Maine	Printing presses, apparatus for delivering paper from	Apr. 25, 1865.
	Furbush, M. A., and G. Crompton. (*See* Brown, Edward W., assignor.) Reissue.			
47,100	Furlong, E. P., and E. M. Lang	Westbrook, Maine	Wicks, incombustible, mode of rendering	Apr. 4, 1865.
	Furnalds and Clark. (*See* White, Robert, assignor.)			
	Furst, Conrad, and David Bradley. (*See* Lacy, John, assignor.)			
	Gaar, A., and D. M. Cochran. (*See* Cochran & Gaar.)			
	Gage, Benjamin. (*See* Reynolds, Edwin, assignor.)			
47,492	Gage. Chapman E., assignor to Columbia Drew	Winona, Minn	Engines, steam, valve gear of	Apr. 25, 1865.
2,041	Gage, John S	Dowagiac, Mich	Drills, grain, seed coverers for (Reissue)	Aug. 1, 1865.
50,313	Gale, James, jr	England	Gunpowder, mode of keeping. (Patented in England June 22, 1865.)	Oct. 3, 1865.
48,268	Gale, L. D	Washington, D. C	Coffee, process for preparing. (Antedated June 12, 1865)	June 20, 1865.
48,269	Gale, Thomas A	Sterling, Ill	Seeding machine and cultivator	June 20, 1865.
1,977	Gale, Warren, assignor to self and B. B. Belcher	Chicopee Falls, Mass	Straw cutters (Reissue)	May 30, 1865.
2,127	Gale, Warren, assignor to self and B. B. Belcher	Chicopee Falls, Mass	Straw cutters (Reissue)	Dec. 19, 1865.
	Gale, Warren and Andrew. (*See* Macomber, A. S., ass'r.) Reissue.			
48,673	Gallagher, Joseph P	St. Louis, Mo	Cocks	July 11, 1865.
51,304	Gallahue, A. C	Dover Plains, N. Y	Washing machine	Dec. 5, 1865.
47,292	Gallup, A. O., and E. A. Hewitt	Salem, Mass / New London, Conn	Churns	Apr. 18, 1855.
	Galpin, G. W., and E. Ashdown. (*See* Ashdown & Galpin.)			
45,990	Gambell, Squire	Otisco, N. Y	Washing machine	Jan. 24, 1865.
	Gamble, David R., and Frank J. Roth. (*See* Roth & Gamble.)			
	Gannett, William R. and Isaac. (*See* Colburn, E. T., assignor.)			
	Gannon, Thomas. (*See* Webster, Thomas B., assignor.)			
	Gannon, Thomas. (*See* Webster, Thomas B., assignor.)			
	Gannon, Thomas. (*See* Webster, Thomas B., assignor.) Reissue.			
48,017	Ganrage, Samuel F., assignor to self and N. M. Dow	Boston, Mass	Tongs, pipe	May 30, 1865.
48,167	Ganster, George P., assignor to William Foster	New York, N. Y	Shells, explosive, concussion fuze for. (Antedated June 9, 1865)	June 13, 1865.
50,237	Gansy, John G., and Jacob J. Lavo	St. Louis, Mo	Boilers, composition for removing incrustation from	Oct. 3, 1865.
45,991	Gardiner, Eli P	New York, N. Y	Ores, apparatus for desulphurizing and amalgamating	Jan. 24, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
46,461	Gardiner, Eli P	New York, N. Y	Quartz, &c., machinery for breaking	Feb. 21, 1865.
	Gardiner, J. (*See* Monroe, Joshua, assignor.)			
49,747	Gardiner, Joseph B	Springfield, Mass	Shirt bosoms, paper	Sept. 5, 1865.
46,462	Gardiner, Perry G	New York, N. Y	Quartz crushers	Feb. 21, 1865.
46,789	Gardiner, Perry G	New York, N. Y	Quartz crushers	Mar. 14, 1865.
	Gardner, Bela, and Edwin F. Miller. (*See* Miller & Gardner.)			
50,113	Gardner, C	Freedom, Ohio	Drying frames, fruit	Sept. 26, 1865.
47,293	Gardner, Edward M	Nantucket, Mass	Damper, smoke-pipe	Apr. 18, 1865.
47,712	Gardner, George H	New York, N. Y	Fire-arms, revolving	May 16, 1865.
	Gardner, George W	Troy, N. Y	Grate bars, stove (Extension)	Nov. 16, 1865.
51,444	Gardner, Martin, sr	Carlisle, Pa	Washing machine	Dec. 12, 1865.
2,064	Gardner, Robert W	Quincy, Ill	Engine, steam, governors (Reissue)	Sept. 5, 1865.
51,037	Gardner, Robert W., and John Robertson	Quincy, Ill	Valves, governor	Nov. 21, 1865.
50,238	Gardner, Smith	New York, N. Y	Casks oil proof, rendering. (Antedated Sept. 23, 1865)	Oct. 3, 1865.
51,445	Gardner, Smith, and Amasa B. Howe	New York, N. Y	Grain-hulling machines	Dec. 12, 1865.
	Gardner, V. N., and D. A. King. (*See* King & Gardner.)			
51,712	Garner, John C	Ashland, Pa	Whiffletree attachment	Dec. 26, 1865.
49,621	Garrett, D. M	Shelby, Ohio	Hay-forks, horse	Aug. 29, 1865.
	Garrison, Wm. F., and Wm. H. Guild. (*See* Guild & Garrison.)			
51,579	Garver, Jacob L	Hamilton, Ohio	Harvesters. (Antedated December 14, 1865)	Dec. 19, 1865.
48,925	Garver, Samuel S	Hamilton, Ohio	Lock, shutter	July 25, 1865.
49,255	Garvin, P. Eldredge	Philadelphia, Pa	Boiler flues, steam, machine for removing scale from. (Antedated March 30, 1865.)	Aug. 18, 1865.
2,080	Garvin, P. Eldredge	Philadelphia, Pa	Boiler tubes, mechanism for sealing (Reissue)	Oct. 3, 1865.
46,790	Gaskill, William	Cincinnati, Ohio	Sewing machines, hemming gauge for	Mar. 14, 1865.
47,629	Gaskill, William	Cincinnati, Ohio	Hemming guide	May 9, 1865.
47,630	Gaskill, William, and George H. Knight	Cincinnati, Ohio	Hemming guides	May 9, 1865.
	Gassette, S. B., and Thomas J. Burke. (*See* Burke & Gassette.)			
	Gatchell, N. B., and F. H. James. (*See* James & Gatchell.)			
48,270	Gates, Nelson	Middletown, Ohio	Car seats, railroad, head rest for	June 20, 1865.
51,446	Gates, Charles C	Albany, N. Y	Propeller blades, screw, construction of	Dec. 12, 1865.
2,115	Gates, P. W	Chicago, Ill	Quartz stampers, method of making shoes and dies for. (Reissue)	Nov. 28, 1865.
50,572	Gates, P. W	Chicago, Ill	Amalgamator	Oct. 24, 1865.
50,573	Gates, P. W., and D. R. Fraser	Chicago, Ill	Quartz crushers	Oct. 24, 1865.
50,813	Gates, P. W., and D. R. Fraser	Chicago, Ill	Stone breakers	Nov. 7, 1865.
50,702	Gates, Stephen F	Boston, Mass	Paddle wheels, feathering	Oct. 31, 1865.
47,631	Gatling, Richard J	Indianapolis, Ind	Gun, battery	May 9, 1865.
	Gaussoin, Eugene, *et al.* (*See* Deby, Trippel & Gaussoin.)			
49,100	Gaylord, E. L	Terryville, Conn	Lock for piano	Aug. 1, 1865.
51,169	Geeman, Joseph	Chicago, Ill	Kilns, malt	Nov. 28, 1865.
49,871	Gee, William	New York, N. Y	Soda-water apparatus, method of constructing the acid chambers of.	Sept. 12, 1865.
49,515	Geilhausen, Henry	New York, N. Y	Candy-cigar machine	Aug. 22, 1865.
51,170	Geiss, Adolph	Buffalo, N. Y	Burner, gas, for cooking purposes	Nov. 28, 1865.
	Geiss, J., *et al.* (*See* Penn, Geiss & Brosius.)			

51,581	Gemrig, Harry E	Philadelphia, Pa	Strap adjuster	Dec. 19, 1865.
50,574	Gemünder, Albert	New York, N. Y	Propelling apparatus	Oct. 24, 1865.
49,622	Gengembre, H. P	Pittsburg, Pa	Screen, fire	Aug. 29, 1865.
48,674	George, Ammi M	Nashua, N. H	Pipe couplings	July 11, 1865.
	George, Ammi M., and S. Shepherd. (*See* Shepherd & George.)			
46,845	George, John, assignor to self and Henry Hague	Jackson, Mich	Brick machine	Mar. 14, 1865.
	George, John, jr. (*See* Torranee, James, assignor.)			
47,294	George, Joseph	Green county, Mo	Ploughs	Apr. 18, 1865.
45,516	George, R. W	Boston, Mass	Lathe, wood-turning	Aug. 22, 1865.
50,239	Gerrard, Wessell S	Newburg, N. Y	Hinge and fastening, shutter, combined	Oct. 3, 1865.
	Gerard, William. (*See* Gove, Andrew J., assignor.)			
48,805	Gerner, Henry	New York, N. Y	Boilers, steam	July 18, 1865.
48,806	Gerner, Henry	New York, N. Y	Furnaces of steam boilers, &e., hydro-earbon blower for	July 18, 1865.
50,927	Gerner, Henry	New York, N. Y	Buttons	Nov. 14, 1865.
50,349	Ghormley, John B	Bellefontaine, Ohio	Churns	Oct. 10, 1865.
50,464	Ghormley, John B	Bellefontaine, Ohio	Washing machine	Oct. 17, 1865.
46,100	Gibbon, H. E	Brooklyn, N. Y	Fire-arms, safety guard for the hammers of	Jan. 31, 1865.
51,038	Gibbs, J	Warren, Mass	Looms for tape, spooling machine for	Nov. 21, 1865.
51,171	Gibbs, J	Warren, Mass	Weaving tape, machine for winding yarn for	Nov. 28, 1865.
	Gibbs, James S., and Jaeob B. Bennett. (*See* Bennett & Gibbs.)			
51,582	Gibbs, Kendall	Berwick, Maine	Halter, rope, neek	Dec. 19, 1865.
	Gibbs, Samuel W. (*See* Herriek, George W., assignor.)			
49,517	Gibbud, Eli B	Waterbury, Conn	Furnace, tinman's	Aug. 22, 1865.
46,556	Gibson, Abram J., and George Emerson	Cincinnati, Ohio / Newport, Ky	Water-eoolers and purifiers	Feb. 28, 1865.
49,101	Gibson, Charles T	Baltimore, Md	Locks	Aug. 1, 1865.
51,305	Gibson, Gilbert	Port Richmond, N. Y	Anchor tripper	Dec. 5, 1865.
50,430	Gibson, William, assignor to Henry Baxter and John A. Fiteh	Scotland	Almanaes, perpetual	Oct. 10, 1865.
46,656	Gifford, Franeis M	Brant, N. Y	Car eoupling	Mar. 7, 1865.
50,465	Gifford, S. V	Hudson, N. Y	Sieve	Oct. 17, 1865.
45,992	Gifford, W. C	Jamestown, N. Y	Hay spreaders	Jan. 24, 1865.
	Gilbert, Charles, *et al.* (*See* Given, Hutsonpiller & Gilbert.)			
	Gilbert, E. D., and W. J. Gordon. (*See* Gordon & Gilbert.)			
51,260	Gilbert, George W., assignor to self, G. Righter, jr., and J. B. Maxwell.	Radnor, Pa	Barrel head	Nov. 28, 1865.
46,894	Gilbert, J. L	Boston, Mass	Coal and ash sifter	Mar. 21, 1865.
47,540	Gilbert, J. P	Island City, N. Y	Piles, instruments for euring	May 2, 1865.
47,942	Gilbert, Philo M	Kewanee, Ill	Ploughs gang	May 30, 1865.
49,872	Gilbertson, Henry A	New York, N. Y	Vehieles, wheel, folding seats for	Sept. 12, 1865.
46,791	Gilder, Obed	Kinsman, Ohio	Ratchet and pawl, automatic	Mar. 14, 1865.
47,412	Giles, Frederiek A	New York, N. Y	Watches, winding and setting	Apr. 25, 1865.
49,397	Giles. Frederick A	New York, N. Y	Watches, winding and setting	Aug. 15, 1865.
2,055	Giles, Frederiek A	New York, N. Y	Wateh, top-plate and balanee-cock of a (Design)	May 9, 1865.
46,895	Giles, H. G	Troy, N. Y	Stoves, base-burning. (Antedated September 21, 1864)	Mar. 21, 1865.
51,583	Gillespie, G. W	Hartford, Conn	Shelf, folding	Dec. 19, 1865.
	Gillespie, T., *et al.* (*See* Parke, Thomas J., assignor.)			
1,918	Gillet, Noah H	New York, N. Y	Light, artificial, the same as daylight, rendering (Reissue)	Mar. 28, 1865.
49,873	Gillett, Sylvanus M	Homer, N. Y	Gates	Sept. 12, 1865.
46,348	Gillette, E. C	British Columbia	Rulers, parallel	Feb. 14, 1865.
46,854	Gillette, E. C	British Columbia	Augers	Mar. 14, 1865.
48,271	Gillies, Edward S	Albany, Wis	Cultivators	June 20, 1865.
48,168	Gilliland, Lewis L	Dayton, Ohio	Barrels, heads for	June 13, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Gillinder, William T. (*See* Bennett, Edwin, assignor.)			
49,256	Gillinder, William T., and Edwin Bennett	Philadelphia, Pa.	Jars, fruit	Aug. 8, 1865.
51,386	Gillinder, William T., assignor to self and Edwin Bennett	Philadelphia, Pa.	Blow pipes	Dec. 5, 1865.
49,102	Gilman, Albert	Charlestown, Mass.	Paddle wheel, feathering	Aug. 1, 1865.
48,926	Gilman, Henry J	Buffalo, N. Y.	Railroad rail coupling	July 25, 1865.
	Gilman, I., and E. M. Lang. (*See* Lang & Gilman.)			
51,447	Gilmore, Edwin N.	North Easton, Mass.	Hinge	Dec. 12, 1865.
47,713	Gilmore, Milton	Morning Sun, Iowa.	Stove, cooking and heating	May 16, 1865.
48,881	Gilmour, James	Great Britain	Harmoniums	July 18, 1865.
47,295	Ginnaugh, William	Niles, Mich.	Marble, &c., composition for cleaning	Apr. 18, 1865.
48,927	Girond, Victor	New York, N. Y.	Registers for counting revolutions	July 25, 1865.
49,623	Girond, Victor	New York, N. Y.	Steam-gauge cocks	Aug. 29, 1865.
49,624	Girond, Victor	New York, N. Y.	Oil cups, globe	Aug. 29, 1865.
51,172	Gitchell, D. W	New York, N. Y.	Hats	Nov. 28, 1865.
46,557	Gitchell, Willard S	Peru, Ind.	Traps, animal	Feb. 28, 1865.
45,823	Gitt, Daniel D	Arendtsville, Pa.	Harvesters	Jan. 10, 1865.
45,920	Gitt, Daniel D	Arendtsville, Pa.	Rakes, horse	Jan. 17, 1865.
49,874	Gittens, John K	Brooklyn, N. Y.	Boots and shoes, in-sole for	Sept. 12, 1865.
	Gittus, Robert, and Robert Leggett. (*See* Leggett & Gittus.)			
46,657	Given. John H., Henry Hutsonpiller, and Charles Gilbert	Des Moines, Iowa.	Cultivator	Mar. 7, 1865.
50,350	Gladden, William, and Richard F. Bishop	Chrome Hill, Md.	Strippers, cane	Oct. 10, 1865.
49,343	Gladding, Benjamin F., assignor to Elliott P. Gleason	Providence, R. I.	Hook blank, plumbers'	Aug. 8, 1865.
47,296	Gladding, Gilbert R.	Providence, R. I.	Fuel, artificial	Apr. 18, 1865.
45,792	Gladding, Henry C., assignor to self, W. Coleman & Sons, and J. Ralph.	Providence, R. I.	Presses, drop. (Antedated June 20, 1863)	Jan. 3, 1865.
48,675	Gladding, Samuel	Providence, R. I.	Chain-holder	July 11, 1865.
48,676	Gladwin, Porter A	Boston, Mass.	Stove covers, &c., tool for lifting	July 11, 1865.
47,714	Glass, Alexander N., and Henry W. Bartol	Philadelphia, Pa.	Draining machine, centrifugal	May 16, 1865.
49,344	Glass, James, assignor to Cox, Church & Co.	Troy, N. Y.	Grates, stove	Aug. 8, 1865.
48,169	Glaze, Willis	Rochester, Ind.	Wagon brakes	June 13, 1865.
50,114	Gleason, Christopher C	Wauconda, Ill.	Carriage springs, braces for	Sept. 26, 1865.
46,558	Gleason, Elliott P	New York, N. Y.	Tubing, flexible	Feb. 28, 1865.
49,257	Gleason, Elliott P.	New York, N. Y.	Hook blank, gas-fitters'	Aug. 8, 1865.
	Gleason, Elliott P. (*See* Gladding, Benjamin F., assignor.)			
48,548	Gleason, Franklin	Philadelphia, Pa.	Drill, expanding	July 4, 1865.
	Glenn Falls Paper Company. (*See* Cushing, Mark A., assignor.)			
46,559	Glidden, Carlos	Milwaukee, Wis.	Pipes, hot-blast	Feb. 28, 1865.
49,748	Glidden, Charles C. H.	Boston, Mass.	Washing apparatus	Sept. 5, 1865.
	Glinsmann, Henry C. (*See* Cuttica, Charles, assignor.)			
	Glockner, Frederick, and Thomas Shedd. (*See* Shedd & Glockner.)			
50,575	Glover, A. B	Yonkers, N. Y.	Spooling thread, machinery in	Oct. 24, 1865.
50,928	Goble, Uriah H.	Dubuque, Iowa.	Water wheels	Nov. 14, 1865.
49,625	Goddard, C. L.	New York, N. Y.	Wool burring, and similar machines, cylinders of	Aug. 29, 1815.
47,200	Goddard, Kingston	Philadelphia, Pa.	Pumps	Apr. 11, 1865.
47,201	Goddard, Kingston	Philadelphia, Pa.	Tea leaves, machine for rolling	Apr. 11, 1865.

51,387	Goddu, Louis, assignor to Reuben W. Drew	Lowell, Mass	Pegging machines, hand	Dec. 5, 1865.
47,010	Godfrey, B. D	Milford, Mass	Boots and shoes	Mar. 28, 1865.
	Godfrey, Edwin B., and John M. May. (*See* May & Godfrey.)			
50,466	Godfrey, Solomon	Peoria, Ill	Bolts for flouring mills	Oct. 17, 1865.
46,231	Godwin, Thomas W	Portsmouth, Va	Lubricators	Feb. 7, 1865.
47,632	Goebel, Henry	New York, N. Y	Sewing machines, hemmers for	May 9, 1865.
49,794	Goessling, Frederick W	Jersey City, N. J	Sirup and sugar from Indian corn or other grain, process for making.	Sept. 5, 1865.
49,750	Goessling, Frederick W	Jersey City, N. J	Sugar from Indian corn or other grain, method of making	Sept. 5, 1865.
49,751	Goessling, Frederick W	Jersey City, N. J	Sirup from Indian corn or other grain, process of making	Sept. 5, 1865.
2,151	Gold, Daniel L., and John B. Adams	Springfield, Ill	Trade mark (Design)	Aug. 1, 1865.
51,448	Gold, Stephen J	Cornwall, Conn	Boilers, steam, sectional	Dec. 12, 1865.
48,549	Golding, William	New Orleans, La	Engines, steam	July 4, 1865.
	Goldsmith, G. A. & Co. (*See* Vossnack, Emil, assignor.)			
49,996	Goldthwait, Charles	South Weymouth, Mass	Bottle stopper	Sept. 19, 1865.
	Golibart, Simon R. (*See* Turner, Edward, assignor.)			
48,551	Goltry, William	La Grange, Iowa	Marker, field, for planting	July 4, 1865.
	Gondonin, E. P. H. (*See* Durand, François, assignor.)			
	Good, Jacob L. (*See* Killer, Sebastian, assignor.)			
49,951	Goodale, E. W., assignor to Benjamin S. Binney	Clinton, Mass	Paper bags, machine for making	Sept. 12, 1865.
48,807	Goodale, Samuel D	Cincinnati, Ohio	Stereoscopes	July 18, 1865.
47,943	Goodale, Samuel N	Cleveland, Ohio	Cars, rail, steam-brakes for	May 30, 1865.
51,173	Goodell, D. W	Northampton, Mass	Bit stocks	Nov. 28, 1865.
51,449	Goodfellow, Simeon	Troy, N. Y	Piston packing	Dec. 12, 1865.
46,524	Goodman, Joseph, assignor to Charles P. Button	England	Carriage wheels	Feb. 21, 1865.
2,089	Goodnow, A. F., assignor to the Lamson & Goodnow Manufacturing Company.	New York, N. Y	Trade mark (Design)	June 13, 1865.
	Goodrich, E. C., and J. B. Sweetland. (*See* Sweetland & Goodrich.)			
45,993	Goodrich, Horace N	Aurora, Ill	Separator, grain	Jan. 24, 1865.
50,069	Goodrich, N. F., assignor to self and Isaac S. Holmes	Meriden, Conn	Radiators, heat, for stove pipes	Sept. 19, 1865.
46,896	Goodspeed, Isaac, and Gurdon, S	Norwich, Conn; Providence, R. I.	Spinning rollers	Mar. 21, 1865.
50,115	Goodwin, Nathaniel, jr	Newburyport, Mass	Mills, quartz	Sept. 26, 1865.
49,828	Goodwin, William, assignor to J. P. Lindsay	New Haven, Conn	Pipe cement, machinery for making. (Antedated Aug. 28, 1865)	Sept. 5, 1865.
46,102	Goodwin, William F	New York, N. Y	Mortars, hand, mounting	Jan. 31, 1865.
50,814	Goodyear, Albert, 2d	New Haven, Conn	Grain, machines for binding	Nov. 7, 1865.
46,658	Goodyear, Henry B	New Haven, Conn	Bottling apparatus	Mar. 7, 1865.
	Goodyear, Henry B. (*See* Fowler, D. G., and Herbert E., ass'ors.)			
	Goodyear, Nelson, deceased, by Henry B. Goodyear, administrator	New Haven, Conn	Rubber, India, manufacture of (Extension)	May 5, 1865.
	Goodyear, Nelson, deceased, by Henry B. Goodyear, administrator	New Haven, Conn	Rubber, India, manufacture of (Extension)	May 5, 1865.
46,659	Goodyear, Robert A	New Haven, Conn	Hooks, snap	Mar. 7, 1865.
46,846	Goodyear, Stephen W., assignor to Charles Parker	Meriden, Conn	Screw cutting machine	Mar. 14, 1865.
48,550	Gordon, Ebenezer	Cedar Rapids, Iowa	Washing machine	July 4, 1862.
	Gordon, George P	Brooklyn, N. Y	Printing presses (Extension)	July 20, 1865.
	Gordon, George P	Brooklyn, N. Y	Printing presses (Extension)	July 20, 1865.
	Gordon, Peter. (*See* Andrews, T. Cecil, assignor.)			
45,709	Gordon, T. E	Brooklyn, Ohio	Crutches	Jan. 3, 1865.
46,660	Gordon, William J., and Edmund D. Gilbert	Philadelphia, Pa	Buttons in cloth, machines for riveting	Mar. 7, 1865.
	Gordon, William M., *et al.* (*See* Hayse, John W., assignor.)			
46,102	Gorman, James J	Cincinnati, Ohio	Dead-centre lifts	Jan. 31, 1865.
48,928	Gorton, John	Providence, R. I	Wagon axles, gauges for setting pitch to	July 25, 1865.
47,369	Goudelfinger, George, and J. L. Bichet	France	Watches, winding and setting	Apr. 18, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,413	Gouge, Henry A	Brooklyn, N. Y	Ventilators	Apr. 25, 1865.
47,633	Gouge, Henry A	Brooklyn, N. Y	Ventilating, apparatus for	May 9, 1865.
2,056	Gould, A. A	Melrose, Mass	Shoe (Design)	May 9, 1865.
	Gould, Brothers. (*See* Dennisson, John N., assignor.)			
	Gould, Edwin S., and John H. Duck. (*See* Duck & Gould.)			
46,792	Gould, J. H	Cincinnati, Ohio	Forges, blacksmiths'	Mar. 14, 1865.
49,103	Gould, John S	Allegheny, Pa	Stirrup	Aug. 1, 1865.
47,944	Gould, Sylvanus S	Worcester, Mass	Cloth dotter	May 30, 1865.
47,547	Goulding, John	Worcester, Mass	Spinning yarns, jacks and mules for	May 2, 1865.
50,116	Goulding, John	Worcester, Mass	Spinning, bobbins for	Sept. 26, 1865.
50,240	Goulding, John	Worcester, Mass	Spinning, bobbin holder for	Oct. 3, 1865.
50,241	Goulding, John	Worcester, Mass	Spinning, bobbin holder for	Oct. 3, 1865.
	Goulding, John. (*See* Wright, Edward, assignor.)			
46,463	Gove, Andrew J	San Francisco, Cal	Dredging machine for harbors and rivers	Feb. 21, 1865.
48,767	Gove, Andrew J., assignor to self and William Gerard	San Francisco, Cal	Mast coat	July 11, 1865.
1,919	Gowdy, J. B., and J. A. Welsh, assignor, through mesne assignments, to R. E. Richardson.	Xenia, Ohio	Mills, hominy (Reissue)	Mar. 28, 1865.
47,634	Graham, David M	Evansville, Ind	Gas from petroleum, apparatus for generating	May 9, 1865.
50,576	Graham, Edward J	Philadelphia, Pa	Drills, rock. (Antedated October 6, 1865)	Oct. 24, 1865.
	Graham, James. (*See* Munger, W. F., assignor.)			
	Graham N. H. (*See* Shinn, John, assignor.)			
51,450	Graham, Robert A	Greensburg, Ind	Rakes, horse	Dec. 12, 1865.
47,414	Graham, Thomas	Philadelphia, Pa	Coffins	Apr. 25, 1865.
	Granier, Emile. (*See* Loewenberg, Henry, assignor.)			
	Granier, Emile. (*See* Loewenberg, Henry, assignor.)			
49,997	Grant, B. A	Mount Pleasant, Iowa	Seed sower and stalk cutter combined	Sept. 19, 1865.
51,306	Grant, B. A	Mount Pleasant, Iowa	Cultivators	Dec. 5, 1865.
	Grant, Eli, and Samuel Ray. (*See* Ray & Grant.)			
48,677	Grant, Nathaniel, and George Downs	Providence, R. I	Head-dresses, bands for	July 11, 1865.
46,464	Grant, William H	Winchester, Mass	Rubber rolls to shafts, method of uniting	Feb. 21, 1865.
46,103	Gray, C. E	New York, N. Y	Lard, tallow, &c., apparatus for rendering	Jan. 31, 1865.
46,796	Gray, Carroll E	New York, N. Y	Rendering apparatus	Mar. 14, 1865.
2,048	Gray, C. E	New York, N. Y	Lard, tallow, &c., apparatus for rendering (Reissue)	Aug. 8, 1865.
2,049	Gray, C. E	New York, N. Y	Oils and fats, apparatus for rendering (Reissue)	Aug. 8, 1865.
48,768	Gray, D. S., assignor to self and M. H. Messer	Onargo, Ill	Beehives	July 11, 1865.
49,518	Gray, Henry W., assignor to Anthony Gunther	Camden, N. J	Whiting, waste, method of utilizing	Aug. 22, 1865.
	Gray, James D., *et al.* (*See* Judson, Alonzo R., assignor.)			
46,421	Gray, J. W., and C. H. Curtis, assignors to selves and the Spring Perch Company.	Bridgeport, Conn	Springs, elliptical, machines for straightening	Feb. 14, 1865.
48,337	Gray. Joshua, assignor to self, E. H. Eldredge, and S. S. Bucklin.	Medford, Mass	Cartridge retractor for breech-loading fire-arms	June 20, 1865.
48,622	Gray, Joshua, assignor to self, E. H. Eldredge, W. G. Langdon, and S. S. Bucklin.	Medford, Mass	Fire-arms, magazine	July 4, 1865.
51,451	Gray, Lyman	Pittsburg, Pa	Bunghole reamers	Dec. 12, 1865.
46,232	Gray, Solomon S	Boston, Mass	Collars, paper, ladies'	Feb. 7, 1865.

50,242	Greely, B. J	New York, N. Y	Pantaloons	Oct. 3, 1865.
50,351	Greely, B. J	New York, N. Y	Suspenders	Oct. 10, 1865.
	Green, Charles. (*See* Wilson, William, jr., assignor.)			
	Green, Charles. (*See* Wilson, William, jr., assignor.)			
49,752	Green, Eli H	Baltimore, Md	Lamp	Sept. 5, 1865.
50,352	Green, E. J	Valparaiso, Ind	Broom and mop head	Oct. 10, 1865.
47,415	Green, F. B	Seneca Falls, N. Y	Grape-vine supports. (Antedated April 17, 1865)	Apr. 25, 1865.
	Green, Hiram E., and Edward J. Stephens. (*See* Stephens & Green.)			
46,794	Green, Joel	Rochester, N. Y	Petroleum, benzole, &c., apparatus for deodorizing	Mar. 14, 1865.
51,039	Green, John	Lowell, Mass	Printing calico, machine for	Nov. 21, 1865.
49,258	Green, Samuel	Arapahoe county, Col. Ter	Composition for exterminating grasshoppers	Aug. 8, 1865.
50,353	Greene, D	Troy, N. Y	Ice-keeper	Oct. 10, 1865.
2,086	Greene, J. F., assignor, through mesne assignments, to American Water-proof Cloth Company.	Brooklyn, N. Y	Fabrics, felted, waste, obtaining fibres from (Reissue)	Oct. 10, 1865.
47,064	Greene, Ransom, assignor to Joseph Briggs	Willett, N. Y	Presses, wool	Mar. 28, 1865.
	Greene, William H., and Frederick A. Weber. (*See* Weber & Greene.)			
	Greene, William H., and Frederick A. Weber. (*See* Weber & Greene.)			
51,452	Greenhut, Joseph B	Chicago, Ill	Clothes-mangle	Dec. 12, 1865.
51,453	Greenhut, Joseph B	Chicago, Ill	Registers for street cars	Dec. 12, 1865.
47,945	Greenleaf, George D	Three-mile Bay, N. Y	Stovepipe drum	May 30, 1865.
47,011	Greenleaf, W. R	Buffalo, N. Y	Oil ejectors	Mar. 28, 1865.
48,170	Greenleaf, W. R	Buffalo, N. Y	Oil ejectors	June 13, 1865.
51,040	Greenough, John J	New York, N. Y	Looms, circular	Nov. 21, 1865.
	Greenough, J. J., and M. J. Wellman. (*See* Wellman & Greenough.)			
46,661	Greenwood, John	Rochester, N. Y	Barrels, machines for making heads to	Mar. 7, 1865.
50,070	Gregg, Isaac, assignor to Isaac Gregg, jr	Philadalphia, Pa	Brick machine	Sept. 19, 1865.
48,929	Gregg, W. P	Boston, Mass	Skates, roller	July 25, 1865.
51,780	Gregory, George, assignor to Lawrence, Bradley, and Pardee	New Haven, Conn	Wagon seats, turnout	Dec. 26, 1865.
48,808	Greives, John	Brooklyn, N. Y	Derrick, portable	July 18, 1865.
48,809	Greives, John	Brooklyn, N. Y	Well borer	July 18, 1865.
49,753	Grenell, S. G. Bez, and H. C. Stoll	Mokena, Ill	Gates	Sept. 5, 1865.
50,203	Grey, John and Thomas, assignors to selves and John D. and William Grey.	Pittsburg, Pa	Iron, sheet, manufacture of	Sept. 26, 1865.
47,812	Grier, William W., and Robert H. Boyd	Hulton, Pa	Drill bit	May 23, 1865.
50,577	Grier, William W., and Robert H. Boyd	Hulton, Pa	Coal, machine for mining	Oct. 24, 1865.
47,813	Griffin, Benjamin	Lawrence, Mass	Racks, sheep	May 23, 1865.
	Griffin, James F. (*See* Irwin, John H., assignor.)			
	Griffith, Jethro J., and William A. Duff. (*See* Duff and Griffith.)			
	Griffith, John. (*See* Bliss, Lyman C., assignor.)			
48,485	Griffiths, John, assignor to self and Z. S. Durfee	England	Iron, apparatus for puddling	June 27, 1865.
51,307	Griffiths, John Willis	Brooklyn, N. Y	Ships, forming the stern and dead-wood of	Dec. 5, 1865.
51,308	Griffiths, John Willis	Brooklyn, N. Y	Ship-building	Dec. 5, 1865.
45,710	Griggs, Henry C	Waterbury, Conn	Medals, buttons, &c., picture	Jan. 3, 1865.
	Griggs, Henry C. (*See* Smith, John E., assignor.)			
47,715	Grillet, Alexander	Philadelphia, Pa	Arms, small, combined implement for detaching and replacing the parts of. (Antedated May 1, 1865.)	May 16, 1865.
45,896	Grimshaw, Wm. D	England	Hammers, atmospheric	Jan. 10, 1865.
51,174	Grimshaw, Wm. Dakin	New York. N. Y	Capstan	Nov. 28, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,946	Griswold, Charles Lee	Chester, Conn	Augers	May 30, 1865.
50,658	Griswold, Henry J., assignor to self and Henry A. Clark	Norwich, Conn	Composition for tablets, transparent	Oct. 24, 1865.
47,814	Griswold, Martin R	Watertown, Conn	Tobacco pipes, machines for making	May 23, 1865.
50,815	Grod, Nicholas	Newark, N. J	Carpet bags	Nov. 7, 1865.
47,416	Groh, Nicolaus	Helcnsville, Wis	Roofing composition	Apr. 25, 1865.
51,309	Groneweg, Louis, Joseph H. Pulte, and Charles F. Jones	Cincinnati, Ohio	Roofing composition	Dec. 5, 1865.
	Gross, A. H., *et al.* (*See* Ross, Johnston, assignor.)			
48,130	Gross, John, assignor to Thomas K. Alexander	Decatur, Ill	Planters, corn	Jan. 6, 1865.
2,135	Gross, John, assignor through mesne assignments to John H. and David R. Alexander.	Decatur, Ill	Planters, corn (Reissue)	Dec. 26, 1865.
46,465	Gross, Philip J	Manheim Centre, N. Y	Car coupling	Feb. 21, 1865.
49,398	Grover, Benjamin P	Holyoke, Mass	Latch, cupboard	Aug. 15, 1865.
	Grover, Jas. M. (*See* Phifer, Edward, assignor.)			
51,713	Grover, Reuben C., and James Nicholson	Newton, Mass	Pumps, rotary	Dec. 26, 1865.
	Grover, Wm. O., and Wm. E. Baker	Boston, Mass	Sewing machines (Extension)	Feb. 10, 1865.
46,969	Groves, F., assignor to Chas. A. Diehl	New Oxford, Pa.	Evaporator, cane juice	Mar. 21, 1865.
48,390	Groves, Wm., and John	Providence, R. I	Furnaces, puddling	June 27, 1865.
51,714	Gruneberg, John Daniel	Philadelphia, Pa	Metal, plated, manufacture of	Dec. 26, 1865.
47,252	Guerriero, Alexander	Italy	Fire-arms, revolving	Apr. 11, 1865.
	Guillemin, Louis, and Emanuel Burgy. (*See* Burgy & Guillemin.)			
51,175	Guild, Wm. H	Williamsburg, N. Y	Pumps, pneumatic	Nov. 28, 1865.
51,454	Guild, Wm. H., and Wm. F. Garrison	Williamsburg, N. Y	Engines, steam, direct-acting, valve gear for	Dec. 12, 1865.
47,635	Guiteau, Loring M	Batavia, N. Y	Horseshoe	May 9, 1865.
46,349	Gnling, Samuel	Kline's Grove, Pa	Cultivator	Feb. 14, 1865.
49,399	Gunther, Anthony	Philadelphia, Pa	Pianos	Aug. 15, 1865.
	Gunther, Anthony. (*See* Gray, Henry W., assignor.)			
48,171	Gunther, G	New York, N. Y	Flower baskets	June 13, 1865.
50,816	Gustin, A. J	Worcester, Mass	Railroad rails, rolls for rolling	Nov. 7, 1865.
48,810	Guston, Charles H	Worcester, Mass	Car brakes	July 18, 1865.
46,662	Guy, C. B	Sybrand, Iowa	Brakes, collision	Mar. 7, 1865.
48,678	Guy, C. B	Sybrand, Iowa	Lamp and stove, combined	July 11, 1865.
51,041	Guy, C. B	Elkader, Iowa	Wheels, rein-holder for	Nov. 21, 1865.
2,043	Gwynn, Stuart	New York, N. Y	Trade mark (Design)	Apr. 11, 1865.
48,552	Gwynn, Stuart	New York, N. Y	Oil vessels, coating for	July 4, 1865.
46,466	Gwynn, Stuart, assignor to Alfred B. Ely	New York, N. Y	Fibrous and porous materials, impregnating	Feb. 21, 1865.
51,584	Gwynn, Stuart	New York, N. Y	Pigments, opaque, manufacture of. (Antedated Dec. 5, 1865)	Dec. 19, 1865.
	Gwynne, J. Stuart	New York, N. Y	Pumps, rotary (Extension)	Jan. 13, 1865.
	Gwynne, Stuart, and S. F. Van Choate. (*See* Ward, Henry H., assignor.)			
47,947	Habermehl, John	Wheeling, West Va	Grates, fire	May 30, 1865.
48,272	Habermehl, John	Wheeling, West Va	Chair	June 20, 1865.
	Hackert, J., *et al.* (See Dupper, Charles F., assignor.)			
46,663	Hackett, Edward	New York, N. Y	Registers, passenger	Mar. 7, 1865.
	Hadden, E. W., and H. Vanderbeck. (*See* Vanderbeck & Hadden.) Design.			

2,072	Hadden, John L	Philadelphia, Pa	Boiler lid (Design)	May 30, 1865.
51,176	Hadfield, John W	Newtown, N. Y	Rockets, sky	Nov. 28, 1865.
51,403	Haeck, François	Belgium	Distilling spirits and other liquids, apparatus for. (Patented in Belgium June 5, 1864.)	Dec. 5, 1865.
45,994	Haege, Jacob	Shiloh, Ill	Cask for preserving beer, &c	Jan. 24, 1865.
49,587	Hafner, Joseph, assignor to self and F. M. Friendenback	Sterling, Ill	Well drills	Aug. 22, 1865.
46,897	Hagadon, Francis L	Brooklyn, N. Y	Signs, transparent, for street lamps	Mar. 21, 1865.
1,987	Hagan, Wm. E., assignor through mesne assignment to the Hagan Manufacturing Company.	Troy, N. Y	Stoves, by the introduction of superheated steam upon the fuel. (Reissue.)	June 6, 1865.
1,988	Hagan, Wm. E., assignor through mesne assignment to the Hagan Manufacturing Company.	Troy, N. Y	Furnaces for treating ores by superheated steam. (Division B of reissue.)	June 6, 1865.
47,012	Hagen, Conrad, and Frank Aurnhammer	New York, N. Y	Lamp, hydrogen	Mar. 28, 1865.
49,259	Hagenmeyer, Gebhard	Big River, Cal	Grease cups	Aug. 8, 1865.
49,519	Hagerty, John T	Camp Point, Ill	Washing machine and wringer	Aug. 22, 1865.
	Hague, Henry. (*See* George, John, assignor.)			
	Hahn, John, and Lucas Frey. (*See* Frey & Hahn.)			
50,817	Haight, Edgar	Buffalo, N. Y	Paddle wheel, feathering	Nov. 7, 1865.
	Hailes, Wm., and Lewis Rathbone. (*See* Rathbone & Hailes.)			
	Hailes, Wm., and Lewis Rathbone. (*See* Rathbone & Hailes.)			
47,013	Haines, Henry	Farley, Iowa	Sheaf bands, machine for cutting	Mar. 28, 1865.
47,101	Haines, John W	Somerville, Mass	Glass pitchers, silvering	Apr. 4, 1865.
47,948	Haines, John W	Somerville, Mass	Glassware, silvered, manufacture of	May 30, 1865.
	Haines, John W. (*See* Young, Alonzo E., assignor.)			
	Haines, John W. (*See* Young, Alonzo E., assignor.)			
48,059	Haines, P. S	Newburg, N. Y	Carding machines	June 6, 1865.
45,921	Haines, Samuel B	Lancaster, Pa	Horse-powers	Jan. 17, 1865.
48,391	Hainsworth, Frederick	Chicago, Ill	Air, apparatus for carburetting	June 27, 1865.
	Halbach, Henry G. (*See* Landes, John S., assignor.)			
2,136	Hale, Albert W	New York, N. Y	Meat-mincer (Reissue)	Dec. 26, 1865.
50,107	Hale, Charles	Bangor, Maine	Sewing machines	Sept. 26, 1865.
	Hale, H. J. (*See* Brackenridge, A. C., assignor.)			
46,233	Hale, Holman J	New York, N. Y	Tobacco paper	Feb. 7, 1865.
47,815	Hall, Albert	New York, N. Y	Gun, spring, toy	May 23, 1865.
46,561	Hall, Alexander W	New York, N. Y	Amalgamator	Feb. 28, 1865.
47,297	Hall, Alexander W	New York, N. Y	Ore, &c., machine for crushing	Apr. 18, 1865.
50,467	Hall, Alexander W	New York, N. Y	Ore, machine for crushing	Oct. 17, 1865.
50,703	Hall, Alexander W	New York, N. Y	Ore crusher	Oct. 31, 1865.
46,185	Hall, Alexander W., assignor to Almon and Albert Hall	New York, N. Y	Churns	Jan. 31, 1865.
49,970	Hall, A. W., assignor to B. W. Robinson and C. M. Clarke	New York, N. Y	Churn dasher, device for moving	Mar. 21, 1865.
47,065	Hall, A. W., assignor to B. W. Robinson and S. P. Chapin	New York, N. Y	Time-piece, universal	Mar. 28, 1865.
46,561	Hall, Alexander W., and Daniel Bentley	New York, N. Y	Quartz, machinery for crushing	Feb. 28, 1865.
49,400	Hall, Charles H	New York, N. Y	Car tracks	Aug. 15, 1865.
	Hall, Charles, and Emil Hubner. (*See* Hubner & Hall.)			
50,704	Hall, Daniel	Pittsburg, Pa	Iron and steel, mills for rolling	Oct. 31, 1865.
50,929	Hall, Daniel and Joseph	Wheeling, W. Va	Furnaces, puddling	Nov. 14, 1865.
47,716	Hall, George	Morgantown, W. Va	Bread slicer	May 16, 1865.
48,060	Hall, James	Dorchester, Mass	Roofs, the decks of vessels, &c., mode of applying covering to	June 6, 1865.
49,104	Hall, Joel A	Keokuk, Iowa	Cotton chopper, cultivator and drill	Aug. 1, 1865.
49,260	Hall, Joel A	Memphis, Tenn	Cane stripper	Aug. 8, 1865.
46,350	Hall, John D	Philadelphia, Pa	Bread and meat slicer	Feb. 14, 1865.
	Hall, Joseph. (*See* Sintzenich, E. B., assignor.)			
	Hall, J. S., *et al.* (*See* Weed, Samuel S., assignor.)			

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
50,818	Hall, P. V.	Mount Morris, N. Y.	Pianos, organs, &c., instruments for tuning	Nov. 7, 1865.
50,118	Hall, Robert L	Lowell, Mass	Bed bottom	Sept. 26, 1865.
47,816	Hall, Samuel	New York, N. Y	Fastening, blind	May 23, 1865.
48,018	Hall, Samuel Z., assignor to self and George Mott	Camden, N. J	Punches, self-centring. (Antedated May 16, 1865)	May 30, 1865.
50,930	Hall, Starkey	Russelville, Ky	Cultivators	Nov. 14, 1865.
46,234	Hall, Thomas	Boston, Mass	Shoe soles, voltaic	Feb. 7, 1865.
	Hall, Thomas B., and David H. Nation. (*See* Nation & Hall.)			
47,817	Hall, William	Brookline, Mass	Locks	May 23, 1865.
46,847	Hall, William D., assignor to Quinnipiac Company	Harnden, Conn	Manure	Mar. 4, 1865.
48,553	Hall, William Smith	Quincy, Mass	Cars, railway	July 4, 1865.
49,261	Hall, William Smith	Quincy, Mass	Buckle	Aug. 8, 1865.
48,172	Halle, Philip	Philadelphia, Pa	Filter for oils, &c	June 13, 1865.
2,159	Haller, George J	Buffalo, N. Y	Lincoln, Abraham, bust of (Design)	Aug. 8, 1865.
50,931	Halley, Edward	Branford, Conn	Latch, reversible	Nov. 14, 1865.
49,262	Halligan, Thomas J	New York, N. Y	Sewing machines. (Antedated February 8, 1865)	Aug. 8, 1865.
48,273	Hallowell, Albert	Lowell, Mass	Faucets, beer	June 20, 1865.
51,177	Hallowell, Albert, and H. R. Barker	Lowell, Mass	Cocks, steam	Nov. 28, 1865.
46,664	Halsted, A. M	Rye, N. Y	Hay forks, horse	Mar. 7, 1865.
48,061	Halsted, G. B	New York, N. Y	Pots, tea and coffee, handle for	June 6, 1865.
48,930	Halsted, Ira T	Fredonia, N. Y	Amalgamator	July 25, 1865.
45,922	Halsted, William	Trenton, N. J	Fuel, artificial	Jan. 17, 1865.
50,533	Halvorson, Halvor, assignor through mesne assignments to self, William T. Eustis, and Levi L. Cushing, jr.	North Cambridge, Mass	Ores, apparatus for treating	Oct. 17, 1865.
50,534	Halvorson, Halvor, assignor through mesne assignments to self, William T. Eustis, and Levi L. Cushing, jr.	North Cambridge, Mass	Amalgamator	Oct. 17, 1865.
47,417	Hamaker, John H	Freasor's Store, Ohio	Separators, grain	Apr. 25, 1865.
51,528	Hamar, Alexander	Austria	Timber, preserving	Dec. 12, 1865.
48,636	Hamar, Alexander, assignor to John C. Frémont	Austria	Preserving wood from decay	July 4, 1865.
50,819	Hambly, Thomas C	San Francisco, Cal	Cars, street, seats for drivers and conductors of	Nov. 7, 1865.
48,274	Hambujer, E	New York, N. Y	Ticket boxes	June 20, 1865.
50,820	Hambujer, E	New York, N. Y	Tool for opening boxes, &c	Nov. 7, 1865.
49,105	Hamer, James, and Thomas Lippincott	Philadelphia, Pa	Brick moulds	Aug. 1, 1865.
50,243	Hamill, Alexander, sr., and Robert J. B	Baltimore, Md	Railroad rails	Oct. 3, 1865.
51,585	Hamilton, Alexander	Washington, D. C	Wagon shoe lock	Dec. 19, 1865.
	Hamilton, Andrew, and / James DeGray	Broad Bank, Conn / Brooklyn, N. Y	Powder for polishing	Oct. 24, 1865.
	Hamilton, Edward	Chicago, Ill	Cars, railroad, excluding dust from (Extension.)	
48,275	Hamilton, Edward	Chicago, Ill	Hook, snap	June 20, 1865.
	Hamilton, James J. (*See* Bearly, David, assignor.)			
46,351	Hamilton, Joe C., and Henry W	Washington, D. C	Windlass for operating the centre-boards of vessels	Feb. 14, 1865.
1,863	Hamilton, Joseph F	Pittsburg, Pa	Valve gear (Reissue)	Feb. 7, 1865.
1,864	Hamilton, Joseph F	Pittsburg, Pa	Engines, steam, arrangement of valves for	Feb. 7, 1865.
51,310	Hamilton, Palmer	Detroit, Mich	Saw-mills	Dec. 5, 1865.
49,754	Hamilton, S. H	Bushnell, Ill	Cars, coupling and uncoupling	Sept. 5, 1865.
47,355	Hamilton, William, assignor to David Carlisle	St. Louis, Mo	Houses, smoke	Apr. 18, 1865.

49,875	Hamilton, William H	Albany, N. Y	Telegraphic repeaters	Sept. 12, 1865.
1,905	Hammer, Adolph	New York, N. Y	Brewing (Reissue)	Mar. 21, 1865.
2,001	Hammer, Adolph	New York, N. Y	Brewers' boilers (Reissue)	June 20, 1865.
2,002	Hammer, Adolph	New York, N. Y	Mash-tun (Reissue)	June 20, 1865.
47,014	Hammer, Adolph	New York, N. Y	Brewing, process for	Mar. 28, 1865.
47,298	Hammer, Adolph	New York, N. Y	Breweries, coolers for	Apr. 18, 1865.
	Hammer, George B. (*See* Bricker, George, assignor.)			
48,769	Hammer, T. F., assignor to Gilbert J. Hine	Branford, Conn	Machinery clutch	July 11, 1865.
46,752	Hammon, T. W., assignor to self, J. H. and S. Lincoln and A. P. Hammon.	Montfort, Wis	Ploughs, corn	Mar. 7, 1865.
48,679	Hammond, A	Jacksonville, Ill	Ploughs, gang	July 11, 1865.
46,898	Hammond, Nelson	Tioga, Pa	Ventilators, self-regulating	Mar. 21, 1865.
47,299	Hampson, Joseph, and George Laduc	Newburgh, N. Y	Pumps	Apr. 18, 1865.
47,818	Hanchett, James H	Beloit, Wis	Goldwashers, pulverizing tailings from	May 23, 1865.
46,665	Hancock, William N	Salem, N. J	Heater for liquids, portable	Mar. 7, 1865.
48,392	Hand, Caleb C	Cincinnati, Ohio	Broom head	June 27, 1865.
	Hand, Noah, and Thos. S. Speakman. (*See* Speakman & Hand.)			
45,995	Hanes, John	Polkville, Ky	Ploughs	Jan. 24, 1865.
	Hangan, William. (*See* Fowler, B. M., assignor.)			
47,418	Hanley, James	New York, N. Y	Lamp-shade holders	Apr. 25, 1865.
46,795	Hansbrow, Thomas, and B. B. Redding	Sacramento, Cal	Hydrostatic engines	Mar. 14, 1865.
51,586	Hanscom, W. W	San Francisco, Cal	Quartz crushers	Dec. 19, 1865.
50,705	Hansen, A. M	Stockton, Cal	Wind-wheels	Oct. 31, 1865.
47,202	Hansford, Wm	San Francisco, Cal	Preserving eggs, method of	Apr. 11, 1865.
	Hanson, L. W., and Richard Colburn. (*See* Colburn & Hanson.) Reissue.			
47,015	Hard, John W	Decorah, Iowa	Car axles	Mar. 28, 1865.
51,653	Hardick, Charles B. and John, assignors to Albert B. Campbell	Brooklyn, N. Y	Pump valves	Dec. 19, 1865.
48,931	Harding, Francis G	Boston, Mass	Boot-blacking case	July 25, 1865.
45,711	Harding, G. E	Bath, Me	Press	Jan. 3, 1865.
	Harding, Thomas, *et al.* (*See* Thomas, Mast & Harding.)			
	Hardison, F. M., and Ruel W. Whitney. (*See* Whitney & Hardison.)			
	Hardy, Anthony, and Thomas S. Hudson. (*See* Hudson & Hardy.)			
46,899	Hardy, Charles A	Pittsburg, Pa	Stills for oils, &c	Mar. 21, 1865.
51,042	Hardy, Charles A	Pittsburg, Pa	Stills, oil	Nov. 21, 1865.
47,949	Hardy, Emery E	New York, N. Y	Harness	May 30, 1865.
50,354	Hare, C. C	Louisville, Ky	Heater	Oct. 10, 1865.
50,821	Hargrave, Thomas C	Boston, Mass	Stoves, petroleum	Nov. 7, 1865.
48,276	Hargrave, Thomas C., and Kendall W. King		Heater, mercurial	June 20, 1865.
	Hargrave, Thos. C., and Kendall W. King. (*See* King & Hargrave.)			
48,173	Harkness, H. W., and J. C. Mack	Bristol, Conn	Ice-scraper	June 13, 1865.
49,401	Harlass, Frederick W	New York, N. Y	Banjos	Aug. 15, 1865.
46,235	Harold, Thomas George		Toasting, &c., wire fork for	Feb. 7, 1865.
46,525	Harold, Thomas George, assignor to self and Nelson Stafford	Brooklyn, N. Y	Toy block, mosaic	Feb. 21, 1865.
46,467	Harper, John	Hillsborough, Iowa	Beehives	Feb. 21, 1865.
47,016	Harper, John	Salem, Iowa	Cultivators, corn	Mar. 28, 1865.
47,017	Harper, John	Hillsborough, Iowa	Cultivator	Mar. 28, 1865.
48,932	Harper, John G	New York, N. Y	Lighting device, gas	July 25, 1865.
51,311	Harper, J. W	Cleveland, Ohio	Camera stands	Dec. 5, 1865.
46,532	Harper, Nathan	Newark, N. J	Lathes, turning	Feb. 14, 1865.
1,994	Harper, Nathan	Newark, N. J	Lathes, turning (Reissue)	June 13, 1865.
50,119	Harper, Thomas	West Manchester, Pa	Sewing machine	Sept. 26, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
50,555	Harpst, George	New Hamburg, Pa	Composition for welding	Oct. 10, 1865.
	Harrington, B. S. (*See* Priest, David H., assignor.)			
49,588	Harrington, George W., assignor to self and Thomas H. White	Orange, Mass	Sewing machines, guides for	Aug. 23, 1865.
46,526	Harrington, John R., assignor to Agnes V. Harrington	Brooklyn, N. Y	Tuyere	Feb. 21, 1865.
51,312	Harrington, Samuel	Baltimore, Md	Saws, scroll	Dec. 5, 1865.
48,554	Harris, Charles W	Philadelphia, Pa	Scraper, box, ship or mast	July 4, 1865.
2,229	Harris, Conrad, and Paul W. Zoiner	Cincinnati, Ohio	Stove, cooking (Design)	Dec. 12, 1865.
2,230	Harris, Conrad, and Paul W. Zoiner	Cincinnati, Ohio	Stove, cooking (Design)	Dec. 12, 1865.
51,313	Harris, Giles M	Elmira, N. Y	Washing machine	Dec. 5, 1865.
46,468	Harris, Horace	Newark, N. J	Harness snap (Antedated February 12, 1865)	Feb. 21, 1865.
46,796	Harris, Horace	Newark, N. J	Harness snap (Antedated March 1, 1865)	Mar. 14, 1865.
2,202	Harris, Horace, assignor to Benjamin S. Morehouse	Newark, N. J	Emblem of the National Union (Design)	Oct. 17, 1865.
	Harris, Hubbard, adm'r, &c. (*See* Richardson, Alpha.) Extension.			
49,998	Harris, James	Janesville, Wis	Mills, sugar-cane	Sept. 19, 1865.
48,680	Harris, J. H	Newark, N. J	Tobacco, machine for granulating	July 11, 1865.
50,579	Harris, John	Marquette, Wis	Car wheel	Oct. 24, 1865.
50,468	Harris, John A	Pontiac, Mich	Dentists' mallets	Oct. 17, 1865.
46,469	Harris, J. O	Ottawa, Ill	Ticket-holder, railroad	Feb. 21, 1865.
46,900	Harris, J. O	Ottawa, Ill	Supporter, Windsor sash	Mar. 21, 1865.
46,901	Harris, John O	Reading, Pa	Lamp burners	Mar. 21, 1865.
46,797	Harris, Leonard M	Mattawan, Mich	Pruning hooks	Mar. 14, 1865.
	Harris, M., and R. B. Bush. (*See* Pease, James N., assignor.)			
46,933	Harris, M., and R. G. Bush	Jamestown, N. Y	Wringing machines	July 25, 1865.
47,636	Harris, Samuel	Rochester, Mich	Engines, steam, rotary	May 9, 1865.
	Harris, T. J,, *et al.* (*See* Colby, Daniel C., assignor.)			
	Harrison Brothers & Co. (*See* Brandt, Charles F., assignor.)			
	Harrison, James G. *See* Durand, John H.. assignor.)			
46,353	Harrison, James W	Washington, D. C	Book covers, machine for making	Feb. 14, 1865.
	Harrison, John A., and John R. Johnson. (*See* Johnson & Harrison.)			
49,263	Harrison, Joseph, jr	Philadelphia, Pa	Steam generator	Aug. 8, 1865.
49,264	Harrison, Joseph, jr	Philadelphia, Pa	Casting, mode of making and venting cores of	Aug. 8, 1865.
49,876	Harrison, Theophilus, and William C. Buchanan	Belleville, Ill	Separators, grain	Sept. 12, 1865.
46,354	Harrop, Henry	Greenwich, N. Y	Ornamenting, mode of	Feb. 14, 1865.
48,062	Harsha, James	Circleville, Ohio	Stone grinding and polishing machine	June 6, 1865.
45,923	Harshbarger, J. M	Brandonville, W. Va	Seed-sower	Jan. 17, 1865.
	Hart, Abraham, *et al.* (*See* Moxey, J. G., assignor.)			
48,934	Hart, Barney	Washington, D. C	Washing tumblers, apparatus for	July 25, 1865.
48,277	Hart, George	Atwater, Ohio	Churns	June 20, 1865.
51,043	Hart, George W	Aurora, Ind	Press, baling	Nov. 21, 1865.
2,081	Hart, Herbert C	Unionville, Ct	Trap, animal (Design)	June 6, 1865.
45,824	Hart, Ira	Clarksburg, W. Va	Saw-mills, head-blocks for	Jan. 10, 1865.
	Hart, John. (*See* Hervey, Horace L., assignor.)			
51,529	Hart, John	England	Sails, fore-and-aft, devices for reefing	Dec. 12, 1865.
	Hart Manufacturing Company. (*See* Jones, Horace K., assignor.)			

46,186	Hart, Philo W., assignor to the Dalton Knitting Machine Co	Stamford, N. Y	Knitting machines, circular, stop-motion for	Jan. 31, 1865.
50,469	Hart, William	Sand Lake, N. Y	Sewing machines	Oct. 17, 1865.
48,555	Hart, William H	New Britain, Ct	Bolts, door	July 4, 1865.
47,896	Hart, William H., assignor to self and Gilbert Rogers	Meriden, Ct	Oiler	May 23, 1865.
50,120	Hart, William H	New Britain, Ct	Bolts, door	Sept. 26, 1865.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r,)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C,, ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C,, ass'r.)			Design,
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
	Hartford Carpet Co. (*See* Thompson, Henry C., ass'r.)			Design.
47,102	Hartford, D. Frank	Boston, Mass	Screw-driver and tweezers	Apr. 4, 1865.
51,715	Hartman, John, jr	Philadelphia, Pa	Car-brake, automatic. (Antedated December 14, 1865)	Dec. 26, 1865.
50,822	Hartman, S. B	Millersville, Pa	Bridles	Nov. 7, 1865.
47,717	Hartman, W. H	Fostoria, Ohio	Motive power	May 16, 1865.
48,063	Hartman, W. H	Fostoria, Ohio	Seeding machine, roller and drag combined	June 6, 1865.
49,999	Hartman, W. H	Fostoria, Ohio	Jack, lever (Extension)	Sept. 19, 1865.
51,178	Hartman, W. H	Fostoria, Ohio	Seeding machine	Nov. 28, 1865.
45,825	Hartman, W. H., and Samuel Sheller	Fostoria, Ohio	Seeding machine, roller and drag combined	Jan. 10, 1895.
	Hartsock, H. H., and H. Resley. (*See* Collins, M. Grier, assignor.)			
48,811	Hartt, L. B	Detroit, Mich	Washboard	July 18, 1865.
48,393	Harvey, Charles Thompson	New York, N. Y	Cars, sleeping	June 27, 1865.
37,203	Harvey, Davis	Jackson Township, Iowa	Fence	Apr. 11, 1865.
47,113	Harvey, Edmund A	Wilmington, Del	Iron, sheet, machine for cleaning	Apr. 4, 1865.
49,755	Harvey, Edmund A	Wilmington, Del	Brush for cleaning metallic plates	Sept. 5, 1865.
2,116	Harvey, Edmund A	Wilmington, Del	Metal, sheet, machine for cleaning (Reissue)	Nov. 28, 1865.
	Harvey, Edward. (*See* Webster, John Taylor, ass'r.)			Design.
	Harvey, Edward. (*See* Patterson, James, assignor.)			Design.
49,402	Harvey, George	New York, N. Y	Leather, machine for dyeing and pressing	Aug. 15, 1865
47,548	Harvey, H. A	New York, N. Y	Screws, machinery for making	May 2, 1865.
47,549	Harvey, H. A	New York, N. Y	Screws, machinery for making	May 2, 1865.
51,179	Harvey, H. A	New York, N. Y	Screws, machinery for threading	Nov. 28, 1865.
47,300	Harvey, John, and Frederick Herkstweter	St. Louis, Mo	Lap shaver and leather splitter	Apr. 18, 1865.
46,104	Harwood, George Shaw	Boston, Mass	Wool in carding machines, machinery for oiling	Jan. 31, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Harwood, G. S., *et al.* (*See* Shinn, John, assignor.)			
	Harwood, George S., and George H. Quincy. (*See* Hussey, John W., assignor.)			
48,779	Hase, Oscar	Germany	Vegetables, machine for skinning	July 11, 1865.
49,028	Haseltine, John, assignor to self and J. M. Williams	Warren, N. H.	Horseshoes	July 25, 1865.
50,244	Haserick, E. C	Lake Village, N. H.	Stumps, device for extracting	Oct. 31, 1865.
	Hassall, W. S., and G. O. Evans. (*See* Foster, Charles E., ass'or.)			
47,105	Hassenpflug, George F., and George Barnhart	Green Township, Ohio	Cultivator	Apr. 4, 1865.
48,394	Hastings, Mathew	Philadelphia, Pa	Gold-beating machine	June 27, 1865.
51,103	Hatch, Anson, assignor to self and Wilfred H. Nettleton	New Haven, Conn	Drilling machine	Nov. 21, 1865.
47,419	Hatch, Austin S	Addison, N. Y	Propeller, marine	Apr. 25, 1865.
48,064	Hatch, G. W	Parkman, Ohio	Flax, &c., machine for gathering and loading	June 6, 1865.
48,395	Hatch, Jonathan	South Windham, Conn	Paper into sheets, machine for cutting	June 27, 1865.
	Hatcher, J. E., and H. Weller. (*See* Weller & Hatcher.)			
50,706	Hatfield, Charles B	Boston, Mass.	Buckle	Nov. 7, 1865.
47,356	Hatfield, Charles B., assignor to Charles E. Woodman	Boston, Mass	Shoe-fastening	Apr. 18, 1865.
48,236	Hatfield, Charles B., assignor to Eugene H. Richards	Boston, Mass	Buckle	June 13, 1865.
	Hatfield, Charles B., and Charles E. Woodman. (*See* Woodman & Hatfield.)			
2,101	Hathaway, David, assignor to Fuller, Warren & Co	Troy, N. Y	Stove (Design)	June 20, 1865.
47,718	Hatrick, Robert	Paterson, N. J	Tire-fastener	May 16, 1865.
46,666	Haughey, Lorenzo D.	Atlanta, Ill	Cultivators.	Mar. 7, 1865.
46,562	Haughian, Patrick	New York, N. Y	Fire-arm, revolving	Feb. 28, 1865.
46,668	Haupt, Herman	Cambridge, Mass.	Drills, pneumatic	Mar. 7, 1865.
47,541	Haupt, Herman	Cambridge, Mass	Drills, mode of mounting	May 2, 1865.
47,819	Haupt, Herman	Cambridge, Mass	Drilling and boring machine	May 23, 1865.
48,065	Haupt, Herman	Cambridge, Mass	Ventilation of mines	June 6, 1865.
47,168	Haupt, Herman, and J. T. Smith	Cambridge, Mass / Alexandria, Va.	Mining and tunnelling machine	Apr. 4, 1865.
48,935	Haupt, Herman, and J. T. Smith	Cambridge, Mass / Alexandria, Va.	Boats, flat-bottom, construction of	July 25, 1865.
50,580	Hauxhurst, Jotham W	New York, N. Y	File, letter	Oct. 24, 1865.
50,000	Havard, Charles	New York, N. Y	Candles from paraffine, manufacture of.	Sept. 19, 1865.
	Havemyer, T. A. (*See* Beanes & Finzel, assignors.)			
47,542	Hawk, George W	Chicago, Ill	Chair and cradle	May 2, 1865.
50,470	Hawkes, George F.	New York, N. Y	Pen, fountain	Oct. 17, 1865.
50,471	Hawkins, David	Derby, Conn.	Furniture, springs for	Oct. 17, 1865.
46,902	Hawkins, James	Braddock's Field, Pa	Mouth-piece, safety, submarine	Mar. 21, 1865.
	Hawkins, Richard F. (*See* Button, Jesse, assignor.)			
50,472	Hawkins, Samuel C	Patchogue, N. Y	Cars, railway	Oct. 17, 1865.
47,618	Hawkins, William	Birmingham, Conn	Skate	Mar. 28, 1865.
48,396	Hawks, Thomas	Rochester, N. Y.	Sirup, malt, manufacture of	June 27, 1865.
49,679	Hawley, Alfred A., assignor to self and Robert B. Hawley	Methuen, Mass	Carding cylinders, machine for cleaning	Aug. 29, 1865.
48,681	Hawley, E. H	United States army	Alphabet, cryptographic	July 11, 1865.
46,848	Hawthorne, Thomas, assignor to Dudson, Hawthorne & Co	Philadelphia, Pa	Knitting machines, circular. (Antedated February 27, 1865)	Mar. 14, 1865.

48,486	Hay, George R., assignor to self, J. R. and E. Seely	Edgerton, Ohio	Stave machines	June 27, 1865.
	Hayden, Hiram W	Waterbury, Conn	Kettles, and articles of like character, from disks of metal, machinery for making. (Disclaimer.)	Dec. 15, 1865.
	Hayden, Hiram W	Waterbury, Conn	Kettles, and articles of like character, from disks of metal, machinery for making. (Extension.)	Dec. 15, 1865.
47,680	Hayden, Hiram W., assignor to Holmes, Booth & Hayden	Waterbury, Conn	Lamps	May 9, 1865.
47,637	Hayden, Martin	Rochester, N. Y	Planter, seed	May 9, 1865.
49,877	Hayden, Peter	Pittsburg, Pa	Press, automatic	Sept. 12, 1865.
51,587	Hayden, Peter	Pittsburg, Pa	Corks, machines for cutting	Dec. 19, 1865.
	Hayes, Clark J. (*See* Newman, Martin, assignor.)			
50,121	Hayes, John P	Philadelphia, Pa	Burner, petroleum, for cooking, &c.	Sept. 27, 1865.
2,120	Hayes, John P	Philadelphia, Pa	Burner, petroleum, for cooking, &c.	Dec. 5, 1865.
47,950	Hayford, Axel, and Ambrose Strout	Belfast, Maine	Press, hay	May 30, 1865.
46,105	Hays, Casson	Madison, Wis	Ladder, orchard	Jan. 31, 1865.
45,996	Hays, Mark	Worcester, Mass	Sap spile	Jan. 31, 1865.
49,589	Hayse. John W., assignor to self, Wm. M. Gorden and L. J. Rodgers.	Salem, Iowa	Looms, hand	Aug. 22, 1865.
48,682	Hayward, Francis D., and Paschal Stone	Malden, Mass / Charlestown, Mass	Boot-heel	July 11, 1865.
47,719	Hayward, John M	Boston, Mass	Ambulances	May 16, 1865.
49,265	Hazard, A. A	New York, N. Y	Planter, corn	Aug. 8, 1865.
48,936	Hazman, F. X., and L. L. Arnold	New York, N. Y	Cigarette paper	July 25, 1865.
	Hazzard, Joseph H., and Richard Van Velthoven. (*See* Van Velthoven & Hazzard.)			
48,937	Headley, William O	Newark, N. J	Trunk caster	July 25, 1865.
48,938	Heald, George W., and L. D. Cisco	Baldwinsville, N. Y	Pumps, rotary	July 25, 1865.
46,667	Healy, J	South Dansville, N. Y	Gates, construction and hanging of	Mar. 7, 1865.
47,639	Heath, A. A	West Greenville, Pa	Harvesters	May 9, 1865.
47,301	Heaton, Charles	New York, N. Y	Gummy and silicious matters from vegetable fibres, separating	Apr. 18, 1865.
49,106	Heaton, Charles	New York, N. Y	Fibres, vegetable, process for disintegrating	Aug. 1, 1865.
48,397	Heaton, Samuel	Kingston, Iowa	Sorghum evaporators	June 27, 1865.
50,473	Hecht, Ansel	New York, N. Y	Sewing machines, box-plaiting attachment for	Oct. 17, 1865.
	Hedden, R., *et al.* (*See* Wheeler, S. H., assignor.)			
	Hedden, R., *et al.* (*See* Wheeler, S. H., assignor.)			
48,604	Heflebower, Samuel	Alexandria, Va	Bolts, flour	July 11, 1865.
	Heinemann & Siberman. (*See* Buser, John, assignor.)			
48,683	Heinlein, John	Galena, Ill	Washing machine	July 11, 1865.
47,720	Heitman, B. H	Hoboken, N. J	Anchor-tripper	May 16, 1865.
47,104	Heitman, Henry, and John Radican	Brooklyn, N. Y / New York, N. Y	Windlass and capstan, screw	Apr. 4, 1865.
48,398	Held, Ludwig	Harlem, N. Y	Barrels, composition for lining	June 27, 1865.
	Heller & Teibrock. (*See* Mueller, Augustus C., assignor.)			
45,712	Heller, Daniel C	Reading, Pa	Bolt, shutter	Jan. 3, 1865.
51,513	Heller, Daniel C., assignor to self and B. Frank Boyer	Reading, Pa	Pavement, composition	Dec. 12, 1865.
47,204	Hellman, Isaac	St. Louis, Mo	Bitters, tonic	Apr. 11, 1865.
50,823	Helm, Henry	Alleghany, Pa	Car wheels upon axles, mode of adjusting	Nov. 7, 1865.
51,180	Helms, Charles H	Poughkeepsie, N. Y	Burnishing machine	Nov. 28, 1865.
47,951	Hemenway, S. S	Boston, Mass	Clothes-wringer. (Antedated May 19, 1865.)	May 30, 1865.
48,399	Hemingray. Robert	Cincinnati, Ohio	Jar, fruit	June 27, 1865.
48,939	Hemmer, William	Newark, N. J	Table or desk	July 25, 1865.
49,756	Hemperly, John F., and Charles Barns	West Liberty, Iowa	Grain-binders	Sept. 5, 1865.
48,812	Hemper, Henry H	Washington, D. C	Sun-dials, pocket	July 18, 1865.
49,626	Heneage, Robert	Buffalo, N. Y	Dryers, grain	Aug. 29, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,820	Hendershott, Wells	Batavia, N. Y.	Railroad chair and coupling	May 23, 1865.
	Henderson, D., *et al.* (*See* Wheeler, S. H., assignor.)			
50,474	Henderson, James	Brooklyn, N. Y.	Iron and steel, manufacture of	Oct. 17, 1865.
	Henderson, James, and Chas. M. Keller. (*See* Keller & Henderson.)			
46,798	Henderson, John G., and Henry T	Salem, Iowa	Looms, hand	Mar. 14, 1865.
47,722	Henderson, William, and J. W. Fowle	Boston, Mass	Cars, horse-railway, starting	May 16, 1865.
51,314	Henderson, William M	Baltimore, Md	Engines, steam, valves for	Dec. 5, 1865.
	Henderson, Wm. Y., and John Seaman. (*See* Seaman & Henderson.)			
49,520	Hendricks, G. J	Paris, Pa	Racks, sheep	Aug. 22, 1865.
51,716	Hendricks, John H	Clinton, Ill	Beehives	Dec. 26, 1865.
49,680	Hendryx, A. B., assignor to self, H. A. Shipman, and Robert Hoadley	Derby, Conn.	Lamp, kerosene, burners	Aug. 29, 1865.
47,721	Hendy, Joshua	San Francisco, Cal.	Blow-pipes	May 16, 1865.
48,685	Heninger, Anton	New Haven, Conn	Knives, dirk	July 11, 1865.
50,581	Henis, Charles F	Cincinnati, Ohio	Steam gauges	Oct. 24, 1865.
	Henis, Charles F., and Geo. W. Smith. (*See* Smith & Henis.)			
48,556	Henkel, George H	Middletown, Ohio	Faucet measures, graduated. (Antedated June 25, 1865)	July 4, 1865.
50,356	Henriksen, Benjamin A	San Francisco, Cal.	Chimney tops	Oct. 10, 1865.
46,049	Henry, Levy J., assignor to Joseph Benrimo	San Francisco, Cal.	Piles, wooden, mode of protecting the surfaces of	Jan. 24, 1865.
	Henry, M. G., *et al.* (*See* Veregge, Henry W., assignor.)			
46,355	Henry, Samuel	Chenoa, Ill	Cultivators	Feb. 14, 1865.
	Henry, Thomas, and Thomas Byrne. (*See* Byrne & Henry.)			
47,169	Henschen, William	Hennepin Co., Minn	Beehives	Apr. 4, 1865.
	Hensel, H. W. (*See* Valetton, L. D., assignor.)			
49,829	Henze, Gustave, assignor to self and Edward R. Sommerkorn	New York, N. Y.	Mouldings and frames, machine for making	Sept. 5, 1865.
	Herkstroeter, Frederick, and John Harvey. (*See* Harvey & Herkstroeter.)			
51,315	Herman, David	Bigler, Pa	Beehives	Dec. 5, 1865.
47,106	Herr, Wilhelmine P. L	Brooklyn, N. Y.	Potato seedlings, instrument for cutting	Apr. 4, 1865.
48,019	Herrick, George W., assignor to Samuel W. Gibbs	Stuyvesant, N. Y	Stoves, globe	May 30, 1865.
	Herrick, L. M., and G. Livingston Morse. (*See* Morse & Herrick.)			
51,717	Hersam, Isaac F	Stoneham, Mass	House, green, sash	Dec. 26, 1865.
	Herschell, Clemens. (*See* DeRostham, Joseph, assignor.)			
	Hersey, E., *et al.* (*See* Lang & Gilman, assignors.)			
51,588	Herter, Martin	New York, N. Y.	Piano-forte action	Dec. 19, 1865.
49,345	Hervey, Horace L., assignor to self and John Hart	Philadelphia, Pa.	Churns	Aug. 8, 1865.
50,932	Hewes, S. Emilius	Albany, N. Y.	Pumps, deep well	Nov. 14, 1865.
47,723	Hewett, C. P	Kingston, Wis.	Car-axles, railroad	May 16, 1865.
45,997	Hewett, Clark R	Waupun, Wis	Straw-cutters	Jan. 24, 1865.
	Hewitt, E. A., and A. O. Gallup. (*See* Gallup & Hewitt.)			
50,245	Hewitt, Horatio J	Brooklyn, N. Y.	Type, printing, script	Oct. 3, 1865.
50,475	Hewitt, Horatio J	Brooklyn, N. Y.	Ruling and printing machines, combination in	Oct. 17, 1865.
51,044	Hewitt, Horatio T	Scotch Plains, N. J	Clock escapements	Nov. 21, 1865.
51,045	Hey, Michael	Philadelphia, Pa	Curtains, window, cord-tightener for	Nov. 21, 1865.
2,027	Hickcox, George A	Brooklyn, N. Y.	Pistol handle, revolving (Design.)	Jan. 31, 1865.

50,872	Hickel, Sanford A., assignor to self, C. J. and B. F. Armstrong	Roane Co., Va	Tanning	Nov. 7, 1865.
49,473	Hickey, Michael, assignor to self, E. H. Maxwell, and J. T. McKnight	Boston, Mass	Casks, bung for	Aug. 15, 1865.
48,400	Hickman, Gibbons G	Downingtown, Pa	Railroad frogs	June 27, 1865.
50,582	Hickman, Gibbons G	Downingtown, Pa	Pockets, safety	Oct. 24, 1865.
	Hickox, W. O	Harrisburg, Pa	Regulators for the pen-beam in ruling-machines...(Extension)	June 14, 1865.
47,493	Hicks, Alonzo, assignor to self and Lionel Jacobs	Factoryville, N. Y	Lamps	Apr. 25, 1865.
49,403	Hicks, Charles M	Rushville, N. Y	Racks, sheep	Aug. 15, 1865.
45,794	Hicks, Franklin L., assignor to Benjamin and Phineas Lawrence	New York, N. Y	Inkstand	Jan. 3, 1865.
48,487	Hicks, Horatio F., assignor to Hicks Brothers	Grandview, Ind	Presses, baling	June 27, 1865.
46,470	Hicks, William Cleveland	New York, N. Y	Engines, steam	Feb. 21, 1865.
1,952	Hicks, William Cleveland	New York, N. Y	Fire-arms, breech-loading...(Reissue)	May 9, 1865.
49,878	Hicks, William S	New York, N. Y	Pen and pencil case	Sept. 12, 1865.
	Hicks, Wolfe & Co. (*See* Worden, Leonard, jr., assignor.) Reissue.			
51,718	Hidden, E. S	New York, N. Y	Ships' lights, means of closing	Dec. 26, 1865.
	Higbee, Charles P. (*See* Wilson, D. A., assignor.)			
48,940	Higbee, Jonas	Northport, N. Y	Rudder	July 25, 1865.
46,753	Higbee, Jonas, assignor to self and Joseph B. Denton	Northport, N. Y	Rudder	Mar. 7, 1865.
50,476	Higby, Jasper E	West Meriden, Ct	Jars and cans, instrument for lifting	Oct. 17, 1865.
51,719	Higdon, Philip	Cropper's Depot, Ky	Hoisting machines	Dec. 26, 1865.
51,654	Higgins, S. B., assignor to self, E. C. Coleman, and John Brown	South Boston, Mass	Journal box	Dec. 19, 1865.
45,826	Higgins, S. Ross	Parma, Mich	Hay, machines for loading	Jan. 10, 1865.
46,050	Higham, Enos T., assignor to self and D. Higham	Philadelphia, Pa	Shade-adjuster, window	Jan. 24, 1865.
50,707	Higley, Aaron	South Bend, Ind	Jacks, carriage	Oct. 31, 1865.
51,514	Higley, Peter R., assignor to self, Wm. Smith, and E. W. Clark	Buffalo, N. Y	Mop head	Dec. 12, 1865.
47,019	Hildebrandt, John Henry	Brooklyn, N. Y	Splitting machines, wood	Mar. 28, 1865.
47,302	Hildreth, H. A., and W. J. Johnson	Lowell, Mass / Newton, Mass	Broilers and toasters, wire	Apr. 18, 1865.
47,821	Hill, B. B	Chicopee, Mass	Presses, embossing and seal	May 23, 1865.
2,203	Hill, B. B	Chicopee, Mass	Seal or embossing press, stock of a...(Design)	Oct. 17, 1865.
46,356	Hill, Benjamin B. and John R	Worcester, Mass	Traps, box, for animals	Feb. 14, 1865.
47,543	Hill, Benjamin S	New York, N. Y	Screw-threads, dies for cutting	May 2, 1865.
48,401	Hill, Benjamin S	New York, N. Y	Pumps	June 27, 1865.
48,867	Hill, Emma, assignor to Thomas Dolan	Philadelphia, Pa	Hoods, ladies'	July 18, 1865.
48,770	Hill, George B., assignor to Ellis S. Archer	New York, N. Y	Pumps, air, rotary	July 11, 1865.
45,893	Hill, George J., assignor to H. G. Leisenring	Buffalo, N. Y	Stamp, hand	Jan. 10, 1865.
48,488	Hill, George J., assignor to self and H. G. Leisenring	Buffalo, N. Y	Numbering and paging machine	June 27, 1865.
49,521	Hill, J. J	Xenia, Ohio	Diggers, potato	Aug. 22, 1865.
49,522	Hill, John Q	Worcester, Mass	Faucets	Aug. 22, 1865.
50,824	Hill, John R	Millville, N. J	Cars, railroad, coupling for	Nov. 7, 1865.
49,404	Hill, Martin W	New York, N. Y	Chest, flour. (Antedated August 4, 1865)	Aug. 15, 1865.
46,357	Hill, N	Canton, N. Y	Carpet stretchers	Feb. 14, 1865.
51,720	Hill, S. L	Williamsburg, N. Y	Toy clock	Dec. 26, 1865.
50,477	Hill, Thomas	St. Louis, Mo	Journal boxes	Oct. 17, 1865.
51,320	Hill, Thomas M	Eaton, Ohio	Churns	Dec. 5, 1865.
51,455	Hill, Warren E	Brooklyn, N. Y	Grate bar	Dec. 12, 1865.
48,402	Hill, W. R	Detroit, Mich	Washing machine	June 27, 1865.
50,583	Hillman, Charles Diedrich	Louisville, Ky	Drawing board, symmetrical	Oct. 24, 1865.
47,638	Hills, Amariah M	Hockanum, Conn	Lamp shades	May 9, 1865.
49,107	Hills, John L	New York, N. Y	Railway chairs. (Antedated July 21, 1865)	Aug. 1, 1865.
46,298	Hilton, Theophilus, assignor to self and William D. Hilton	Providence, R. I	Tree protectors	Feb. 7, 1865.
50,708	Hinds, William H. K	Groton, Mass	Candlesticks	Oct. 31, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Hine, Charles S. (*See* Bentley, George W., assignor.)			
	Hine, Charles S. (*See* Bentley, George W., assignor.)			
	Hine, Gilbert J. (*See* Hammer, T. F., assignor,)			
50,246	Hines, Abraham F	Washington, D. C	Planters, corn	Oct. 3, 1865.
	Hines, C. M., and P. S. Brewster. (*See* Brewster & Hines.)			
47,205	Hinkel, Peter and Frederick	New York, N. Y	Carbonic acid gas, apparatus for generating	Apr. 11, 1865.
48,941	Hinkel, Peter and Frederick	New York, N. Y	Liquids, apparatus for cooling	July 25, 1865.
50,086	Hinkely, E., and G. W. Crowell	Cleveland, Ohio	Chimney caps	Sept. 19, 1865.
51,046	Hinkley, Holmes	Boston, Mass	Boilers, steam	Nov. 21, 1865.
	Hinman, Egbert, and Henry Loftie. (*See* Loftie & Hinman.)			
49,405	Hinman, N. D	Pleasant Dale, Conn	Hay-forks, horse	Aug. 15, 1865.
49,628	Hinsdale, William R	Brooklyn, N. Y	Wells, oil, extracting tubes, drills, &c., from	Aug. 29, 1865.
	Hinshillwood, John. (*See* Stratton, James, assignor.)			
	Hintsicker, E. A., *et al.* (*See* Parker, Thomas J., assignor.)			
51,181	Hirsh, Adolf Henry	Chicago, Ill	Albumen and potash from blood, manufacture of	Nov. 28, 1865.
50,535	Hiscock, Joseph H., assignor to self, E. A. Nichols, and G. C. Shaw.	Turner, Maine	Shells, explosive	Oct. 17, 1865.
45,713	Hise, D. H	Salem, Ohio	Railway couplings	Jan. 3, 1865.
45,714	Hise, Henry	Ottawa, Ill	Hook, snap	Jan. 3, 1865.
	Hissert, Benjamin F. (*See* Jarrett, Thomas T., assignor.)			
	Hitchcock, Alfred C. (*See* Sampson, Elnathan, assignor.)			
	Hitchcock, Alfred C. (*See* Sampson, Elnathan, assignor.)			
49,266	Hitchcock, Alonzo	New York, N. Y	Cannons, forging. (Antedated July 30, 1865)	Aug. 8, 1865.
50,247	Hitchcock, Alonzo	New York, N. Y	Crushing machine, roller. (Antedated September 23, 1865)	Oct. 3, 1865.
49,029	Hitchcock, Marcus T., assignor to self and James M. Ross	Springfield, Mass	Heat controllers, attachment. (Antedated July 19, 1865)	July 25, 1865.
48,942	Hittel, Samuel	Detroit, Mich	Watches	July 25, 1865.
	Hoadley, Robert, *et al.* (*See* Hendryx, A. B., assignor.)			
47,822	Hoard, J. S., and C. M. Miles	Vineland, N. J	Fruit basket	May 23, 1865.
49,879	Hobbs, Alvin I	Kokomo, Ind	Car couplings	Sept. 12, 1865.
	Hobbs, A. T., *et al.* (*See* Adams, John, assignor.)			
50,122	Hobbs, Jonas	North Sandford, N. Y	Churn dashers	Sept. 26, 1865.
50,123	Hock, Hermann, and Jacob Zilz	Philadelphia, Pa	Warmer, foot	Sept. 26, 1865.
49,406	Hoekert, S. L	Pittsburg, Pa	Supporters, uterine	Aug. 15, 1865.
48,813	Hodge, Samuel F	Detroit, Mich	Rock crushers	Aug. 18, 1865.
49,267	Hodge, Samuel F	Detroit, Mich	Engines, steam, slide valves for	Aug. 8, 1865.
47,908	Hodges, James	England	Excavators	May 23, 1865.
48,623	Hodges, J. Wilson, assignor to self and P. de Murguiondo	Baltimore, Md	Horseshoe	July 4, 1865.
	Hodgett, Charles. (*See* Jones, Charles, assignor.)			
	Hodgett, Charles. (*See* Jones, Charles, assignor.)			
48,943	Hodgins, Samuel	St. Louis, Mo	Boot-heels	July 25, 1865.
47,640	Hodgkins, E	Carthage, N. Y	Washing machine	May 9, 1865.
46,358	Hodgskin, James B	New York, N. Y	Pencil point protector and mark eraser	Feb. 14, 1865.
2,184	Hoe, Robert, jr	New York, N. Y	Press, copying (Design)	Oct. 10, 1865.
47,823	Hoefer, Julius	New York, N. Y	Beer, apparatus for cooling	May 23, 1865.
	Hoffheins, R. (*See* Wilson, Daniel F., assignor.)			
48,557	Hoffheins, R	Dover, Pa	Harvesters, combined rakes and reels, attachment to	July 4, 1865.

1,888	Hoffheins, Reuben	Dover, Pa	Harvesters (Division A of reissue)	Feb. 28, 1865.
2,102	Hoffheins, Reuben	Dover, Pa	Harvesters (Division B of reissue)	Nov. 7, 1865.
46,106	Hoffman, Antoine A	New York, N. Y	Sawing machine, scroll	Jan. 31, 1865.
49,268	Hoffman, Christian	Philadelphia, Pa	Tobacco pipes	Aug. 8, 1865.
48,174	Hoffman, Conrad and Frederick W	Morrisania, N. Y	Cigars, machine for cutting off	June 13, 1865.
48,244	Hoffman, Frederick E	Prussia	Brick-kiln, circular	June 13, 1865.
51,318	Hoffman, George W	Harrisburg, Pa	Broom head	Dec. 5, 1865.
45,998	Hoffman, James H	New York, N. Y	Collars, paper, enamelled, turndown	Jan. 24, 1865.
47,107	Hoffman, James H	New York, N. Y	Collars, paper, sweat-proof, manufacture of	Apr. 4, 1865.
2,034	Hoffman, James H	New York, N. Y	Collars, paper, enamelled, turndown (Reissue)	July 25, 1865.
1,995	Hoffman, Theodore A	Beardstown, Ill	Dextrine, sugar, &c., manufacture of (Reissue)	June 13, 1865.
47,303	Hoffman, William	Washington, D. C	Bayonet attachment	Apr. 18, 1865.
47,304	Hogg, Peter	New York, N. Y	Steam traps	Apr. 18, 1865.
45,827	Holbrook, Oliver T	Rushville, N. Y	Reaping and mowing machines	Jan. 10, 1865.
	Holcroft, Henry, and B. A. Earl. (*See* Earl & Holcroft.)			
50,248	Holcroft, Henry, and C. A. Smith	Media, Pa.	Carts, brakes for	Oct. 3, 1865.
51,047	Holden, Delia E	Cleveland, Ohio	Darning last	Nov. 21, 1865.
49,269	Holden, Franklin	Clyde, Ill	Rakes, horse	Aug. 8, 1865.
49,474	Holden, Henry, assignor to self and John E. Stow	New York, N. Y	Torpedo	Aug. 15, 1865.
1,953	Holden, Humphrey	New Haven, Conn	Pipes, cement, machines for making	May 9, 1865.
46,187	Holden, Stoughton B., assignor to self, and L. L. Holden	Woburn, Mass	Valise and seat combined (Reissue)	Jan. 31, 1865.
	Holden, W., and J. N. Woodward. (*See* Woodward & Holden.)			
46,359	Holland, James	Philadelphia, Pa	Barrel for holding petroleum and other oils	Feb. 14, 1865.
46,903	Hollaway, L	Gilroy, Cal	Ploughs, gang	Mar. 21, 1865.
46,056	Hollands, Edrod Richard	England	Metal, machine for punching. (Patented in England Oct. 27, 1863)	Jan. 24, 1865.
48,175	Holley, George W	Niagara, N. Y	Stone, hay, &c., machine for gathering and loading	June 13, 1865.
46,799	Hollinger, Elias	New Haven, Ind	Fence	Mar. 14, 1865.
45,999	Hollingsworth, Ellis A	South Braintree, Mass	Paper bags, machine for folding	Jan. 24, 1865.
47,641	Hollingsworth, James	Chicago, Ill	Cultivators	May 9, 1865.
48,944	Hollingsworth, James	Chicago, Ill	Rakes, horse	July 25, 1865.
49,880	Hollingsworth, Robert J	Cincinnati, Ohio	Cans, tin, soldering	Sept. 12, 1865.
	Hollins, John J., and Henry Napier. (*See* Napier & Hollins.)			
48,278	Holloway, Edward F	Knightstown, Ind	Churns	June 20, 1865.
48,403	Holloway, Edward F	Knightstown, Ind	Straw cutters	June 27, 1865.
48,945	Holloway, J. W	Akron, Ohio	Piston packing	July 25, 1865.
46,107	Holly, Bindsil	Lockport, N. Y	Furnace, hot-air	Jan. 31, 1865.
50,584	Holly, Bindsil	Lockport, N. Y	Tongs, fire	Oct. 24, 1865.
51,182	Holly, H. W	Norwich, Conn	Rollers with cloth or canvas, clamp for covering. (Antedated November 18, 1865.)	Nov. 28, 1865.
45,795	Holly, Henry W., assignor to self and John T. Fanning	Norwich, Conn	Calendars, perpetual	Jan. 3, 1865.
50,124	Holman, Chester C	Clayville, N. Y	Yoke, neck, and whiffletree sockets	Sept. 26, 1865.
	Holmes, Booth and Hayden. (*See* Hayden, Hiram W., assignor.)			
50,585	Holmes, D. E	Halifax, Mass	Trace fastening	Oct. 24, 1865.
	Holmes, Elijah J., and Charles N. Taylor. (*See* Taylor & Holmes.)			
48,131	Holmes, Ira, assignor to self and Scott Lord	Moscow, N. Y	Stove, petroleum	June 6, 1865.
	Holmes, Isaac L. (*See* Goodrich, N. F., assignor.)			
48,868	Holmes, Josiah, assignor to Hussey, Wells & Co	Pittsburg, Pa	Metal, tapering bars or plates of machinery for rolling	July 18, 1865.
47,724	Holmes, Lawrence	Paterson, N. J	Wells, boring	May 16, 1865.
46,108	Holmes, Orsamus	New Lenox, Ill	Threshing machines	Jan. 31, 1865.
	Holmes, Peter. (*See* Power & Bailey, assignors.) Reissue.			
50,249	Holmes, P. B	New York, N. Y	Caster for furniture	Oct. 3, 1865.
51,048	Holroyed, William and James	Waterford, N. Y	Die stock	Nov. 21, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
45,715	Holt, Frastus	Wheaton, Ill	Hay carts, self-loading	Jan. 3, 1865.
47,494	Holt, Horace, assignor to W. W. Secombe	New York, N. Y	Stamps, hand, composition for preparing ribbons in	Apr. 25, 1865.
48,624	Holt, Horace, assignor to W. W. Secombe	Brooklyn, N. Y	Stamp, hand	July 4, 1865.
49,930	Holt, John F., assignor to Woonsocket Rubber Company	Providence, R. I	Clothes-wringers, roller for	July 25, 1865.
46,754	Holt, Samuel, assignor to Charles A. Bulkly	Newark, N. J	Looms for weaving plush or piled fabrics	Mar. 7, 1865.
48,281	Holtz, B., and William Enoch	Springfield, Ohio	Cultivators	June 20, 1865.
49,407	Holyoke, Charles O	Boston, Mass	Vessels of war, defensive armor for	Aug. 15, 1865.
	Holzer, Julius, and Isaac A. Sheppard. (*See* Sheppard & Holzer.)			
	Design.			
49,757	Homer, Henry	New York, N. Y	Bell pull	Sept. 5, 1865.
47,206	Homer, Nelson	Laona, N. Y	Washboard	Apr. 11, 1865.
47,642	Homer, Nelson	Laona, N. Y	Mop head	May 9, 1865.
	Hood, D. C., and W. H. S. Jordan. (*See* Wood, Chas. A., ass'r.)			
50,001	Hood, Robert	Dayton, Ohio	Drilling machine, rock	Sept. 19, 1865.
46,669	Hook, Albert H	New York, N. Y	Collars, paper, apparatus for folding	Mar. 7, 1865.
2,056	Hook, Albert H., assignor to G. W. Ray and V. N. Taylor	Springfield, Mass	Collars, paper, apparatus for folding (Reissue)	Aug. 22, 1865.
2,110	Hook, Albert H., assignor to G. W. Ray and V. N. Taylor	Springfield, Mass	Collars, paper, apparatus for folding (Reissue)	Nov. 21, 1865.
46,563	Hook, Albert H., and John H. Darlington	New York, N. Y	Skate feet	Feb. 28, 1865.
1,860	Hook, A. H., and J. H. Darlington, assignors to the United States Barrel-coating Company.	New York, N. Y	Barrels to render them oil-tight, coating (Reissue)	Jan. 31, 1865.
48,946	Hooker, William C	Abingdon, Ill	Hedges, machine for trimming	July 25, 1865.
49,408	Hooker, William D	Stockton, Cal	Pumps	Aug. 15, 1865.
	Hoole, Edmund. (*See* Decrow, A. W., assignor.)			
2,217	Hooton, Isaac T., and J. H. Cummings	Boston, Mass	Badge, army (Design)	Nov. 7, 1865.
46,904	Hoover, John	Manchester, Md	Carriages, double tree for	Mar. 21, 1865.
47,420	Hoover, Jonas	Oscaloosa, Iowa	Sugar, removing foreign substances from	Apr. 25, 1865.
47,305	Hoover, Samuel M	Carlisle, Pa	Spring, coupling, gum-elastic	Apr. 18, 1865.
46,905	Hoover, W. Upton	Macomb, Ill	Threshing machines, band cutter and feeder for	Mar. 21, 1865.
48,279	Hoover, W. Upton	Macomb, Ill	Threshing machines, band cutters for	June 20, 1865.
48,280	Hoover, W. Upton	Macomb, Ill	Band-cutting machines	June 20, 1865.
	Hope, J., *et al.* (*See* Minter, James, assignor.) Reissue.			
48,686	Hopkins, H. L	San Francisco, Cal	Packing boxes, metallic	July 11, 1865.
45,960	Hopkins, Thomas	Cincinnati, Ohio	Lard, &c., apparatus for rendering	Jan. 17, 1865.
2,124	Hopson, Orin L., and Heman P. Brooks	Waterbury, Conn	Wire, machine for pointing (Reissue)	Dec. 12, 1865.
46,237	Hornig, Julius	Oswego, N. Y	Metal, machines for cutting	Feb. 7, 1865.
48,066	Horning, Samuel G	Mount Carroll, Ill	Cultivators	June 6, 1865.
46,188	Horrall, W. A., assignor to self and Albert W. Cross	Washington, Ind	Brick machines	Jan. 31, 1865.
46,564	Horrobin, W. T	Biddeford, Maine	Casting, device for forming moulds for	Feb. 28, 1865.
50,709	Horsfall, Henry	New York, N. Y	Annunciator	Oct. 31, 1865.
	Horst, Henry, and B. F. St. John. (*See* St. John & Horst.)			
47,306	Horton, Henry B	Ithaca, N. Y	Clocks, calendar	Apr. 18, 1865.
50,586	Horton, H. W	Hamburg, Mich	Boiling apparatus, water	Oct. 24, 1865.
2,090	Horton, James, and John Martins, assignors to Stuart Peterson	Philadelphia, Pa	Stove, plates of a (Design)	June 13, 1865.
51,049	Horton, J. G. C	St. Louis, Mo	Weatherstrip and stop	Nov. 21, 1865.
50,071	Horton, Marcus L., assignor to Sydney Smith	Claremont, N. H	Stoves, cooking	Sept. 19, 1865.

50,072	Horton, Marcus L., assignor to Sydney Smith	Claremont, N. H	Stoves, cook	Sept. 19, 1865.
47,824	Horton, Martin	Brooklyn, N. Y	Gauges, carpenters'	May 23, 1865.
	Horton, S. E. (*See* Chase, John, assignor.)			
50,002	Horton, William Henry	Jersey City, N. J	Chimney cap	Sept. 19, 1865.
46,906	Horton, W. W	Freeport, Ill	Transporting oil, method of	Mar. 21, 1865.
47,952	Hosier, William	Washington Township, Ind.	Churns	May 30, 1865.
2,160	Hosmer, George, assignor to self and J. R. Winch	Boston, Mass	Trade mark	Aug. 8, 1865.
48,176	Hotchkiss, Bennet	New Haven, Conn	Match splint cards	June 13, 1865.
	Hotchkiss, Bennet. (*See* Shattuck, Henry, assignor.)			
47,544	Hotchkiss, B. B	New York, N. Y	Shells, explosive	May 2, 1865.
47,725	Hotchkiss, B. B	New York, N. Y	Projectiles for rifled ordnance, packing	May 16, 1865.
50,357	Hotchkiss, B. B	New York, N. Y	Projectiles for rifled ordnance, packing	Oct. 10, 1865.
50,587	Hotchkiss, Horace	Plainfield, N. J	Umbrellas	Oct. 24, 1865.
2,121	Hotchkiss, James	Springfield, Ohio	Brick machine (Reissue)	Dec. 5, 1865.
51,050	Hotchkiss, James, and Ezra Buss	Springfield, Ohio	Brick machine	Nov. 21, 1865.
48,814	Hotchkiss, John A., and Richard Eaves	Derby, Conn	Washer, dish	July 18, 1865.
	Hotchkiss Sons. (*See* Marsh, Clark, assignor.)			
	Hottenstein, H. P. (*See* Temple, James, assignor.)			
46,360	Hotz, Nikolas	Brooklyn, N. Y	Pumps	Feb. 14, 1865.
47,207	Houchin, Thomas W	Morrisania, N. Y	Gas, instrument for lighting	Apr. 11, 1865.
50,825	Hough, Earl F	Martinez, Cal	Wind wheels	Nov. 7, 1865.
51,051	Houghton, Charles, and Robert S. Lewis	Attica, N. Y	Wells, tube, reservoir drill for	Nov. 21, 1865.
47,726	House, Henry M	Washington, D. C	Tables, &c., movable joint for	May 16, 1865.
48,177	House, James A. and Henry A	Bridgeport, Conn	Chair	June 13, 1865.
48,947	House, James A. and Henry A	Bridgeport, Conn	Mowing machines, lawn	July 25, 1865.
49,758	House, James A. and Henry A	Bridgeport, Conn	Boring braces	Sept. 5, 1865.
	House, Mark H., and John M. Perkins. (*See* Perkins & House.)			
	House, Mark H., and John M. Perkins. (*See* Perkins & House.)			
48,408	House, Royal E	Binghamton, N. Y	Telegraphs, electro-phonetic. (Patented in England July 21, 1864.)	June 27, 1865.
49,270	Hover, H. M	New York, N. Y	Stair rod	Aug. 8, 1865.
	Hovey, Edwin S. (*See* Coolidge, John G. W., assignor.)			
2,231	Hovey, Francis	New York, N. Y	Press, letter, arch of a (Design)	Dec. 12, 1865.
51,183	Hovey, J. G	Waverly, Iowa	Pumps	Nov. 28, 1865.
50,588	Hovey, Samuel D	Chicago, Ill	Fuel, artificial	Oct. 24, 1865.
	How, Timothy. (*See* Chase, Aaron, jr., assignor.)			
48,404	Howard, Benjamin	New York, N. Y	Ambulances	June 27, 1865.
50,125	Howard, Charles	New York, N. Y	Fire-arms, breech-loading	Sept. 26, 1865.
50,358	Howard, Charles	New York, N. Y	Fire-arms, breech-loading	Oct. 10, 1865.
50,126	Howard, G. W	Pontiac, Mich	Transporting oil, &c., tanks for	Sept. 26, 1865.
48,067	Howard, Henry	Westfield, Mass	Heating, steam, boiler for	June 6, 1865.
51,456	Howard, Hiram L	Mendon, Mich	Tire-upsetting machine	Dec. 12, 1865.
46,670	Howard, James L	Hartford, Conn	Stove-pipe dampers	Mar. 7, 1865.
51,319	Howard, Michael	Virginia City, Nevada	Hair restorative	Dec. 5, 1865.
	Howard, Rufus L. (*See* Johnston, Samuel, assignor.)			
	Howard, Rufus L. (*See* Johnston, Samuel, assignor.)			
50,589	Howard, William	Middletown, Ohio	Scissors	Oct. 24, 1865.
	Howe, Amasa B., and Smith Gardner, (*See* Gardner & Howe.)			
	Howe, Elias, jr. (*See* McCurdy, James S., assignor.)			
46,000	Howe, Frederick W	Providence, R. I	Fire-arms, rear sight-base for	Jan. 24, 1865.
46,671	Howe, Frederick W	Providence, R. I	Fire-arms, breech-loading	Mar. 7, 1865.
2,137	Howe, George A	Brooklyn, N. Y	Cotton-picker (Reissue)	Dec. 26, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
2,138	Howe, George A	Brooklyn, N. Y	Cotton-picker (Division 2 of reissue)	Dec. 26, 1865.
48,068	Howe, Henry	Darlington, Wis	Cultivators	June 6, 1865.
48,687	Howe, J. M	Portland, Oregon	Wagon wheels, machines for making	July 11, 1865.
	Howe, Josiah. (*See* Riper, Edwin S., assignor.)			
2,040	Howe, Lindsay J , and John V. Bouvier	New York, N. Y	Scales, bullion, standard of (Design)	Mar. 28, 1865.
1,958	Howe, Manley, and Henry R. Stevens	Boston, Mass	Dye colors, manufacture of (Reissue)	May 16, 1865.
1,959	Howe, Manley, and Henry R. Stevens	Boston, Mass	Dye colors, manufacture of (Division 2 of reissue)	May 16, 1865.
48,405	Howell, A. C	Vienna, N. J	Beverage	June 27, 1865.
47,825	Howell, Benoni H	New York, N. Y	Barrels, composition for lining	May 23, 1865.
45,716	Howell, Martin R	Elizabethport, N. J	Sprues, moulders'	Jan. 3, 1865.
51,721	Howell, William H	Ewingsville, N. J	Cultivators	Dec. 26, 1865.
	Howes, A., *et al.* (*See* Mason, Melchor B., assignor.)			
	Howes, A., *et al.* (*See* Mason, Melchor B., assignor.)			
47,935	Howes, Frederic	Boston, Mass	Crupper	May 30, 1865.
	Howes, S., and H. Montgomery. (*See* Montgomery & Howes.) Reissue.			
47,108	Howland, Edward P	Worcester, Mass	Car coupling	Apr. 4, 1865.
49,523	Howlett, Charles	Manchester, Conn	Cartridge-boxes, revolving	Aug. 22, 1865.
46,605	Howson, Henry, assignor to Stuart & Petersen	Philadelphia, Pa	Stoves, gas-burning. (Antedated February 20, 1865)	Feb. 28, 1865.
46,849	Howson, Henry, assignor to Rock Drill Manufacturing and Mining Company.	Philadelphia, Pa	Well-boring apparatus	Mar. 14, 1865.
47,897	Howson, Henry, assignor to William Wharton, jr	Philadelphia, Pa	Well-boring	May 23, 1865.
	Howson, Henry, and William E. Lockwood. (*See* Lockwood & Howson.)			
51,052	Hoxsie, David K., and Thomas L. Reed	Providence, R. I	Tubing, flexible, manufacture of	Nov. 21, 1865.
50,127	Hoyt, Edwin	Stamford, Conn	Tobacco pipe	Sept. 26, 1865.
48,489	Hoyt, L. D., and Robert Murray, assignors to James W. Tufts	Medford, Mass Boston, Mass	Soda-water apparatus, draught cock for	June 27, 1865.
50,003	Hubbard, John A	West Moulton, Maine	Wind wheels	Sept. 19, 1865.
51,589	Hubbard, J. M	West Haven, Conn	Corn, machine for husking	Dec. 19, 1865.
46,971	Hubbard, Orange B., assignor to self, L. J. Smith, and L. J. McMasters.	Lowell, Mass	Looms	Mar. 21, 1865.
49,524	Hubbard, W. W	Philadelphia, Pa	Bolts, machines for cutting threads on	Aug. 22, 1865.
47,826	Hubbell, George Wolsey	Derby, Conn	Japanning, apparatus for	May 23, 1865.
2,185	Hubbell, Henry S. and Alfred S	Buffalo, N. Y	Stove, cooks' (Design)	Oct. 10, 1865.
2,186	Hubbell, Henry S. and Alfred S	Buffalo, N. Y	Stove, cooks' (Design)	Oct. 10, 1865.
2,187	Hubbell, Henry S. and Alfred S	Buffalo, N. Y	Stove, parlor (Design)	Oct. 10, 1865.
2,188	Hubbell, Henry S. and Alfred S	Buffalo, N. Y	Stove, parlor (Design)	Oct. 10, 1865.
2,189	Hubbell, Laporte	Bristol, Conn	Clock movement, frame of a (Design)	Oct. 10, 1865.
51,184	Hubbell, Laporte	Bristol, Conn	Clocks, marine	Nov. 28, 1865.
	Hubbell, P., *et al.* (*See* Blake, George T., assignor.)			
50,710	Hubbell, William Wheeler	Philadelphia, Pa	Oil ejectors	Oct. 31, 1865.
50,711	Hubbell, William Wheeler	Philadelphia, Pa	Shells, incendiary	Oct. 31, 1865.
46,001	Huber, Edward	Kelso, Ind	Rakes, horse	Jan. 24, 1865.
47,421	Hubner, Emil	New York, N. Y	Rubber, &c., implement for cutting	Apr. 25, 1865.

51,316	Hubner, Emil, and Charles Hall	New York, N. Y.	Nut machines	Dec. 5, 1865.
	Hubner, G. (*See* Kloenne, Wilhelm, assignor.)			
47,545	Huckins, James H. W	Boston, Mass	Soup, tomato	May 2, 1865.
46,361	Hudson, Charles H	New York, N. Y.	Washboards, attachment for	Feb. 14, 1865.
45,828	Hudson, Edward P	Washington, D. C.	Steel, manufacture of	Jan. 10, 1865.
50,128	Hudson, Erasmus D	New York, N. Y.	Surgical apparatus for exsections	Sept. 26, 1865.
45,829	Hudson, Sidney	Milford, Mich.	Tallying machines for measured grain	Jan. 10, 1865.
46,236	Hudson, Thomas T	East Cambridge, Mass	Lamps, hanger for	Feb. 7, 1865.
51,053	Hudson, Thomas T	East Cambridge, Mass	Stamps, postage and revenue, machine for cancelling	Nov. 21, 1865.
48,338	Hudson, Thomas S., and Anthony Hardy, assignors to Thomas S. Hudson.	East Cambridge, Mass	Stamp, hand	June 20, 1865.
46,238	Hudson, William S	Paterson, N. J.	Valves, safety, device for operating	Feb. 7, 1865.
	Huffer, Abraham. (*See* Sehner, Nathaniel, assignor.)			
48,558	Huffer, Abraham, and Nathaniel Sehner	Hagerstown, Md.	Padlocks	July 4, 1865.
	Hughes, F. W. (*See* Marshall, Loomis G., assignor.)			
	Hughes, F. W. (*See* Marshall, Loomis G., assignor.)			
1,943	Hughes, G. W., assignor to Burnside Rifle Company	Bloomington, Ill	Fire-arms, magazine or self-loading (Reissue)	May 2, 1865.
49,409	Hughes, G. W., and J. G. Pusey, assignors to Burnside Rifle Company.	Providence, R. I.	Fire-arms, magazine	Aug. 15, 1865.
49,108	Hughes, William	Bloomington, Ill	Springs, steel, tempering	Aug. 1, 1865.
	Hughes, William W., *et al.* (*See* Bristol, C. B., assignor.)			
48,882	Hugon, Pierre, assignor to Emil Justh	France	Wood, apparatus for carbonizing	July 18, 1865.
49,346	Hugon, Pierre, assignor to Emil Justh	France	Gas engines	Aug. 8, 1865.
47,827	Hugunin, R. B	Cleveland, Ohio	Wringers, device for covering rollers for	May 23, 1865.
50,712	Hugunin, R. B	Cleveland, Ohio	Washing machines, covering for rollers for	Oct. 31, 1865.
51,590	Huiet, Michael	Miamisburg, Ohio	Washing machine	Dec. 19, 1865.
51,591	Huiet, Michael	Miamisburg, Ohio	Washing machine	Dec. 19, 1865.
51,054	Hulings, Margaret	Indianapolis, Ind	Spinning machines	Nov. 21, 1865.
48,406	Hull, Duane	Newbury, N. Y.	Turpentine and other products from resinous wood, extracting	June 27, 1865.
50,004	Hull, George	Wallingford, Conn	Fog alarms	Sept. 19, 1865.
	Hull, G. N. (*See* Schon, Karl, assignor.)			
49,271	Hull, Liveras	Charlestown, Mass.	Looms for weaving goods with elastic strands, tension mechanism for.	Aug. 8, 1865.
2,109	Hull, Liveras, assignor to self and A. Wheeler	Charlestown, Mass.	Varnish, copal, process for making (Reissue)	Nov. 22, 1865.
50,933	Hull, Maurice C	New York, N. Y.	Ranges, cooking	Nov. 14, 1865.
46,002	Hüllhorst, F	Freeport, Ill.	Vegetable cutter	Jan. 24, 1865.
46,003	Hüllhorst, F	Freeport, Ill.	Bread slicer	Jan. 24, 1865.
47,909	Hulot, A. A	France	Ink, printing	May 23, 1865.
2,108	Humiston, Willis	Troy, N. Y.	Candle-mould apparatus (Reissue)	Nov. 14, 1865.
46,362	Humphrey, D. F	Saline, Mich.	Ploughs	Feb. 14, 1865.
49,627	Humphrey, D. W. G	Chelsea, Mass.	Sewing machine, botton-hole	Aug. 29, 1865.
50,253	Humphrey, D. W. G	Chelsea, Mass.	Sewing machine, button-hole	Oct. 3, 1865.
46,907	Humphrey, R	Unionville, Conn	Spoons	Mar. 21, 1865.
46,239	Hungerford, Henry	Brooklyn, N. Y.	Fasteners, key	Feb. 7, 1865.
47,830	Hunt, D. W	San Francisco, Cal.	Horse-powers	May 23, 1865.
51,185	Hunt, F. A	New York, N. Y.	Washing machine	Nov. 28, 1865.
	Hunt, German H. (*See* Poole, Robert, assignor.)			
	Hunt, German H. (*See* Poole, Robert, assignor.)			
2,067	Hunt, Henry	Abington, Mass.	Shoe (Design)	May 16, 1865.
47,307	Hunt, James G	Cincinnati, Ohio	Gate, farm	Apr. 18, 1865.
54,717	Hunt, J. T. P	Manchester, N. Y.	Lamp posts, gas, street	Jan. 3, 1865.
	Hunt, Thomas, *et al.* (*See* Macfarlane, Thomas, assignor.)			

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
1,867	Hunt, Walter, assignor, through mesne assignments, to William E. Lockwood.	Philadelphia, Pa	Collars, shirt (Division C of reissue)	Feb. 7, 1865.
1,926	Hunt, Walter, assignor, through mesne assignments, to William E. Lockwood.	Philadelphia, Pa	Collars, shirt (Division A of reissue)	Apr. 4, 1865.
1,927	Hunt, Walter, assignor, through mesne assignments, to William E. Lockwood.	Philadelphia, Pa	Collars, shirt (Division D of reissue)	Apr. 4, 1865.
50,073	Hunt, Zebulon, assignor to self and Wm. J. Miller	Hudson, N. Y	Stoves, coal	Sept. 19, 1865.
47,828	Hunter, Andrew	Solano county, Cal	Ores, apparatus for separating and concentrating	May 23, 1865.
47,727	Hunter, S. R. and William S	Cortland, N. Y	Boring apparatus	May 16, 1865.
47,728	Hunter, William H	Ridgefield, Ill	Planters, corn	May 16, 1865.
51,186	Huntington, B. S	New York, N. Y	Latch for blind or shutters	Nov. 28, 1865.
48,240	Huntington, Gideon	Norwichville, Canada West	Tires, wagon, machine for upsetting. (Antedated June 7, 1865)	June 13, 1865.
	Huntley, George R., and Emerson C. Strange. (*See* Strange & Huntley.)			
47,546	Hurd, Daniel	Chicago, Ill	Cocks, stop, rotating	May 2, 1865.
47,550	Hurd, Daniel, assignor to self, E. R. Warren, and A. E. Swift	Chicago, Ill	Air, apparatus for carburetting	May 2, 1865.
51,722	Hurd, J. M	Auburn, N. Y	Flour sacks	Dec. 26, 1865.
48,688	Hurlburt, K. Thomas	Lyons, N. Y	Carriage top	July 11, 1865.
49,109	Hurm, Philip	Hamilton, Ohio	Wood-bending machines	Aug. 1, 1865.
49,272	Hursh, Joseph and Abraham	Philadelphia, Pa	Moulds, facing	Aug. 8, 1865.
49,273	Hursh, Joseph and Abraham	Philadelphia, Pa	Ochre from sand, apparatus for separating	Aug. 8, 1865.
45,718	Hurst, Elam D	Lancaster, Pa	Spinning machines, thread-guide for	Jan. 3, 1865.
	Husband, J. L., and William Budd. (*See* Budd & Husband.)			
	Husband, J. L., and William Budd. (*See* Budd & Husband.)			
46,908	Huse, W. W	Brooklyn, N. Y	Tobacco, machine for cutting	Mar. 21, 1865.
48,689	Huse, W. W	Brooklyn, N. Y	Tobacco, process for curing	July 11, 1865.
50,934	Huson, Edgar, assignor to self and Charles D. Johnson	Ithaca, N. Y	Wells, artesian, devices for opening	Nov. 14, 1865.
49,410	Huss, John Adam	St. Louis, Mo	Hydro-pneumatic engine	Aug. 15, 1865.
48,178	Hussey, David G	Nantucket, Mass	Sleds, boys'	June 13, 1865.
48,179	Hussey, David G	Nantucket, Mass	Rakes, horse	June 13, 1865.
51,187	Hussey, David G	Nantucket, Mass	Rakes, horse	Nov. 28, 1865.
51,188	Hussey, David G	Nantucket, Mass	Sleds, children's	Nov. 28, 1865.
46,189	Hussey, John W., assignor to Geo. S. Harwood and Geo. H. Quincy	Boston, Mass	Wool in carding machines, machinery for oiling	Jan. 31, 1865.
47,831	Hussey, Sarah J. A	Cornwall, N. Y	Table for hospitals	May 23, 1865.
	Hussey, Wells & Co. (*See* Holmes, Josiah, assignor.)			
49,031	Huston, Arthur, assignor to Shaw & Clark	Bristol, Maine	Sewing machines, cloth-guide for	July 25, 1865.
49,629	Huston, James E	Hillsdale, Mich	Bolts, flour	Aug. 29, 1865.
46,672	Huston, William	Wilmington, Del	Engines, steam	Mar. 7, 1865.
	Hutchins, E. S. (*See* Leavey, John E., assignor.)			
48,625	Hutchinson, Charles B., assignor to self and J. H. Woodruff	Auburn, N. Y	Barrels, oil, process for lining	July 11, 1865.
45,924	Hutchinson, Daniel	Fort Ancient, Ohio	Corn sheller	Jan. 17, 1865.
	Hutchinson, Elias S. (*See* McAvoy, Hugh L., assignor.)			
	Hutchinson, Elias S. (*See* McAvoy, Hugh L., assignor.)			
	Hutchinson, Elias S. (*See* McAvoy, Hugh L., assignor.)			
	Hutchinson, Elias S. (*See* McAvoy, Hugh L., assignor.) Reissue.			

45,719	Hutchinson, Henry C	Cayuga, N. Y	Lamps. (Antedated September 12, 1865)	Jan. 3, 1865.
2,133	Hutchinson, James, assignor to W. and J. Sloane	Newark, N. J	Carpet pattern (Design)	July 4, 1865.
49,347	Hutchinson, S. B., assignor to self, G. W. Ray, and V. N. Taylor	Nashua, N. H	Collars, paper	Aug. 8, 1865.
49,110	Hutchinson, William L	Burlington, Iowa	Trace trimmer	Aug. 1, 1865.
48,815	Hutchinson, Henry	Three Rivers, Mich	Churns	July 18, 1865.
50,005	Hutson, G. O	Iowa City, Iowa	Gate posts	Sept. 19, 1865.
	Hutsenpiller, Henry, *et al.* (*See* Given, Hutsenpiller & Gilbert.)			
	Hutton, Levi, and Rishton Lord. (*See* Lord & Hutton.)			
47,832	Hyatt, George W	Auburn, N. Y	Bolts, iron, shears for cutting	Mar. 21, 1865.
50,359	Hyatt, John W., jr	Albany, N. Y	Billiard ball. (Antedated September 27, 1865)	Oct. 10, 1865.
	Hyde, James, and John B. Siccardi. (*See* Siccardi & Hyde.)			
50,006	Hyde, J. Burrows	New York, N. Y	Compound for destroying vermin	Sept. 19, 1865.
49,475	Hyde, J. B., assignor to New York Pier and Warehouse Company	Newark, N. J	Wharf, pier and warehouse	Aug. 15, 1865.
46,673	Hyde, Walter	New York, N. Y	Well borer	Mar. 7, 1865.
47,729	Hyde, Walter	New York, N. Y	Wells, boring	Mar. 14, 1865.
51,592	Hynes, P. J	Cooperstown, Pa	Wells, boring	Dec. 19, 1865.
46,674	Hyves, Hector	New York, N. Y	Fabrics, elastic	Mar. 7, 1865.
47,833	Hyzer, Jacob B	Janesville, Wis	Stove-pipe drum	Mar. 21, 1865.
48,180	Hyzer, Jacob B	Janesville, Wis	Radiating, heat, attachment for stoves and furnaces	June 13, 1865.
	Illig, Peter J., and Joseph Neuberger. (*See* Neuberger & Illig.)			
48,948	Illingworth, Joseph Jacob	Brooklyn, N. Y	Boilers, cleaning tubes in	July 25, 1865.
47,834	Imlay, Charles G	Philadelphia, Pa	Jars, fruit	May 23, 1865.
50,301	Imlay, Charles G., assignor to self and C. C. Lathrop	Philadelphia, Pa	Jars, fruit, holder for	Oct. 3, 1865.
50,129	Imlay, William L	Philadelphia, Pa	Churns	Sept. 26, 1865.
45,720	Ingalls, Walter	Sanbornton, N. H	Boats, attachment of trains of. (Antedated Sept. 12, 1863)	Jan. 3, 1865.
48,069	Ingels, Joseph	Milton, Ind	Drills, grain	June 6, 1865.
50,713	Ingersoll, Platt C	Greenpoint, N. Y	Bed bottom	Oct. 31, 1865.
46,051	Ingersoll, P. S., assignor to self and Horace F. Dougherty	Greenpoint, N. Y	Presses	Jan. 24, 1865.
49,032	Ingersoll, Simon, assignor to self and George H. Keith	Stamford, Conn	Ore-crushers	July 25, 1865.
	Ingham, A., *et al.* (*See* Brown, Ingham & Lomont.)			
46,675	Ingle, John W., and R. H. Wright	Livingston, Ill	Cultivators	Mar. 7, 1865.
49,111	Ingraham, Hanford	Naples, N. Y	Cultivators	Aug. 1, 1865.
51,055	Ingraham, Hanford	Naples, N. Y	Cultivators	Nov. 21, 1865.
49,411	Ingram, James	New York, N. Y	Shutter cases	Aug. 15, 1865.
49,033	Ingram, James D., assignor to G. M. Rice, G. S. Barton, and J. E. Fales.	New York, N. Y	Steam-pressure gauges	July 25, 1865.
49,525	Ingram, S. D	Harrisburg, Pa	Reflector, adjustable fastening for a	Aug. 22, 1865.
51,457	Innis, James W	Milroy, Ind	Thill coupling	Dec. 12, 1865.
50,204	Innis, William J., assignor to A. Burgess & Co	Providence, R. I	Spinning machines, machines for making paper cop tubes for	Sept. 26, 1865.
50,007	Irion, Andrew	Femme Osage, Mo	Stirrup, saddle	Sept. 19, 1865.
46,363	Irwin, John H	Chicago, Ill	Lamps and lanterns, burners for	Feb. 14, 1865.
47,256	Irwin, John H	Chicago, Ill	Air, apparatus for carburetting	Apr. 11, 1865.
47,257	Irwin, John H	Chicago, Ill	Air, apparatus for carburetting	Apr. 11, 1865.
47,551	Irwin, John H	Chicago, Ill	Lanterns	May 2, 1865.
49,526	Irwin, John H	Chicago, Ill	Air, apparatus for carburetting	Aug. 22, 1865.
50,250	Irwin, John H	Chicago, Ill	Air, apparatus for carburetting	Oct. 3, 1865.
50,251	Irwin, John H	Chicago, Ill	Air, apparatus for carburetting	Oct. 3, 1865.
50,591	Irwin, John H	Chicago, Ill	Lanterns	Oct. 24, 1865.
1,850	Irwin, John H., assignor to self and James F. Griffin	Chicago, Ill	Lanterns (Reissue)	Jan. 10, 1865.
47,258	Irwin, John H., and Isaac Simmons	Chicago, Ill	Air, apparatus for carburetting	Apr. 11, 1865.
46,800	Isbell, Charles W	New York, N. Y	Engines, steam	Mar. 14, 1865.
	Isbell, R. H. (*See* Vallentine, John G., assignor.)			

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,020	Iseminger, D. H.	Heyworth, Ill.	Sorghum evaporator	Mar. 29, 1865.
51,056	Isham, Henry	New Britain, Conn.	Water meters	Nov. 21, 1865.
49,112	Isham, H. L.	Plattsburg, N. Y.	Wagons, light	Aug. 1, 1865.
46,240	Iske, Anthony	Lancaster, Pa.	Table, extension	Feb. 7, 1865.
49,412	Iske, Anthony	Lancaster, Pa.	Bedstead, hospital	Aug. 15, 1865.
46,801	Ivers, Alfred	New York, N. Y.	Globes for fishes	Mar. 14, 1865.
	Iversen, Hans, *et al.* (*See* Fostensen, Iversen & Skow.)			
46,471	Ives, James	Mount Carmel, Conn.	Lamps	Feb. 21, 1865.
48,816	Ives, James	Mount Carmel, Conn.	Lamps	July 18, 1865.
49,274	Ives, James	Mount Carmel, Conn.	Lanterns	Aug. 8, 1865.
49,630	Ives, James	Mount Carmel, Conn.	Cattle tie	Aug. 29, 1865.
49,413	Ives, James O.	St. Louis, Mo.	Digger, potato.	Aug. 15, 1865.
48,070	Ives, John G.	Springfield, Ill.	Valves, slide	June 6, 1865.
47,357	Jackman, John, jr., assignor to the American Stop-motion Co.	Newburyport, Mass.	Engines, steam, automatic stop motion for	Apr. 18, 1865.
47,358	Jackman, John, jr., assignor to the American Stop motion Co.	Newburyport, Mass.	Engines, steam, automatic stop-motion for	Apr. 18, 1865.
47,359	Jackman, John, jr., assignor to the American Stop-motion Co.	Newburyport, Mass.	Engines, steam, automatic stop-motion for	Apr. 18, 1865.
51,189	Jackson, Andrew P., and Leander Thompson	Memphis, Ind.	Drilling machine	Nov. 28, 1865.
46,109	Jackson, Benjamin	Trenton, N. J.	Pottery ware, safeguard for protecting	Jan. 31, 1865.
50,592	Jackson, Charles, and J. G. Pusey	Providence, R. I.	Cartridges, metallic, priming	Oct. 24, 1865.
49,759	Jackson, Charles H.	Angola, N. Y.	Wells, deep, piston packing for	Sept. 5, 1865.
51,057	Jackson, Charles H.	St. Louis, Mo.	Clothes dryer	Nov. 21, 1865.
49,113	Jackson, H.	New York, N. Y.	Padlocks	Aug. 1, 1865.
46,241	Jackson, Henry	Brooklyn, N. Y.	Locks	Feb. 7, 1865.
47,422	Jackson, Henry	Brooklyn, N. Y.	Stair-rod fastening	Apr. 25, 1865.
	Jackson, Henry. (*See* Ott, W. Adolph, assignor.)			
51,458	Jackson, James	Woonsocket, R. I.	Woodgear, machines for cutting	Dec. 12, 1865.
48,282	Jackson, Peter H.	New York, N. Y.	Windlass	June 20, 1865.
46,110	Jackson, Peter H., and Samuel Eddy	New York, N. Y. Brooklyn, N. Y.	Windlass	Jan. 31, 1865.
49,275	Jackson, Pickmore	Saugus, Mass.	Lasts	Aug. 8, 1865.
50,360	Jackson, Pickmore	Saugus, Mass.	Boot and shoe uppers, machine for cutting	Oct. 10, 1865.
45,830	Jackson, Samuel	Philadelphia, Pa.	Cartridges. (Antedated January 3, 1865)	Jan. 10, 1865.
50,130	Jackson, Silas T.	Sheboygan Falls, Wis.	Wagon wheels, machines for dressing	Sept. 26, 1865.
50,593	Jackson, Silas T.	Sheboygan Falls, Wis.	Chuck, self-centring	Oct. 24, 1865.
	Jackson, Thomas B. (*See* Webber, Nathaniel B., assignor.)			
50,131	Jackson, William, and Frank Robinson	New York, N. Y.	Washing machine	Sept. 26, 1865.
46,004	Jacob, Fritz	New York, N. Y.	Propeller, screw	Jan. 24, 1865.
50,714	Jacob, Fritz	New York, N. Y.	Propeller	Oct. 31, 1865.
	Jacobs, Lionel. (*See* Hicks, Alonzo, assignor.)			
	Jacobs, M. G. and F. H. (*See* Brown, William, assignor.)			
	Jacques, Henry H. (*See* Boyden, Seth, assignor.)			
1,902	Jaeger, William G. W.	Baltimore, Md.	Oils and gases, condensing and separating (Reissue)	Mar. 14, 1865.
49,881	James, Christopher R.	Jersey City, N. J.	Woodgear, machines for cutting	Sept. 12, 1865.
51,058	James, F. H., and N. B. Gatchell	Lancaster, N. Y.	Pontil clamping. (Antedated November 8, 1865)	Nov. 21, 1865.

1,954	James, Ira	Mattoon, Ill	Presses, hay and cotton (Reissue)	May 9, 1865.
47,423	James, William H	Cincinnati, Ohio	Fireplace	Apr. 25, 1865.
48,034	Jamet, Pierre Joseph	Franee	Tackle, safety	May 30, 1865.
49,114	Jamison, Andrew	Taylorstown, Pa.	Water wheels	Aug. 1, 1865.
46,566	Jann, John	New Windsor, Md.	Mowing machines	Feb. 28, 1865.
46,802	Jaques, David L	Hudson, Mich.	Lantern, stove	Mar. 14, 1865.
1,939	Jarrett, Thomas T., assignor to Benjamin F. Hisert	Greenville, N. Y.	Hay-elevating forks (Reissue)	Apr. 18, 1865.
43,831	Jarvis, Charles	Ellsworth, Me.	Cultivator and weeder, root	Jan. 10, 1865.
47,308	Jasper, Gustavus A	Charlestown, Mass.	Charcoal, cleansing and purifying	Apr. 18, 1865.
50,594	Jauriet, Charles F	Aurora, Ill	Car trueks	Oct. 24, 1865.
47,371	Jay, James M., assignor to William H. Alexander & Co.	Canton, Ohio	Rakes, horse	Apr. 18, 1865.
47,769	Jay, James M., assignor to William H. Alexander & Co.	Canton, Ohio	Wagon axles, machines for making the spindles of	May 16, 1865.
48,869	Jeffery, Edwin A., assignor to American Basket Company	New Haven, Conn	Baskets, machines for forming	July 18, 1865.
49,590	Jeffery, Edwin A., assignor to American Basket Company	New Haven, Conn	Fruit baskets	Aug. 1, 1865.
	Jeffreys, G., and P. Lawrence. (*See* Lawrence & Jeffreys.)			
50,361	Jeffrey, Henry	Vincennes, Ind	Claw-bar	Oct. 10, 1865.
49,115	Jelliffe, Charles E. S	Williamsburg, N. Y.	Blacking-box holder	Aug. 1, 1865.
50,074	Jellison, John H., assignor to C. & J. R. Pierce	Milford, Mass	Crimping forms, machine for shaping	Sept. 19, 1865.
	Jenkins, B. R., and C. Sumner. (*See* Millet, John W., assignor.)			
50,362	Jenkins, Henry	Brooklyn, N. Y.	Bars, railroad, moulds for casting	Oct. 10, 1865.
	Jenkins, Henry	Brooklyn, N. Y.	Fence, iron, ornamental connection of the parts of an. (Disclaimer.)	Dec. 29, 1865.
47,309	Jenkins, Nathaniel	Boston, Mass.	Faucets	Apr. 18, 1865.
48,407	Jenkins, Nathaniel	Boston, Mass.	Cocks, self-closing	June 27, 1865.
49,116	Jenkins, Nathaniel	Boston, Mass.	Cocks, valve	Aug. 1, 1865.
49,527	Jenkins, Nathaniel	Boston, Mass.	Faucets	Aug. 22, 1865.
1,979	Jenkins, Nathaniel	Boston, Mass.	Cocks (Reissue)	June 6, 1865.
51,723	Jenkins, Thomas H	New York, N. Y.	Iron, preeess for hardening	Dec. 26, 1865.
51,724	Jenkins, Thomas H	New York, N. Y.	Cutlery, edge tools, &c., substance for making	Dec. 26, 1865.
	Jenks, Barton H. (*See* Lutvan, Isaac, assignor.)			
	Jenks, George. (*See* Aldrich, Hosea P., assignor.)			
	Jenks, George. (*See* Aldrich, Hosea P., assignor.)			
46,472	Jenks, Henry F	Pawtucket, R. I.	Supporters, window-sash	Feb. 21, 1865.
49,760	Jenks, Robert W	Providence, R. I.	Match-safe	Sept. 5, 1865.
	Jenks, Stillman H., and Henry S. Babcock. (*See* Babcock & Jenks.)			
48,817	Jenne, C. M	Young America, Ill.	Cultivators	July 18, 1865.
46,909	Jennings, George N	Virginia City, Nevada	Gold and silver from mineral and earthy substanees, process for separating.	Mar. 21, 1865.
47,022	Jennings, G. W	Boston, Mass	Mowing machines, hand	Mar. 28, 1865.
48,626	Jennings, H. D., assignor to Bernard Lavery	Ilion, N. Y.	Curling irons	July 4, 1865.
46,473	Jennings, James	New York, N. Y.	Gas, illuminating, apparatus for the manufaeture of	Feb. 21, 1865.
46,676	Jennings, John, and George C. Sweet	West Meriden, Conn.	Screw plates	Mar. 7, 1865.
2,081	Jennings, Russell	Deep River, Conn.	Augers (Reissue)	Oct. 3, 1865.
2,057	Jerome, S. B	New Haven, Conn	Clock ease (Design)	May 9, 1865.
47,643	Jerome, Walter W., and Lewis K. Cole	Roebester, N. Y. / Syracuse, N. Y.	Canal gates, lock valves for	May 9, 1865.
50,595	Jervis, James	Baltimore, Md.	File-cutting machines	Oct. 24, 1865.
2,165	Jewell, Alvan L	Waltham, Mass	Wind vane (Design)	Sept. 12, 1865.
48,560	Jewell, John C	Boston, Mass	Forging machine	July 4, 1865.
48,949	Jewett, Edward S	Lima, Mich	Seeding machine, broadeast. (Atedated July 19, 1865)	July 25, 1865.
49,528	Jewett, George B	Salem, Mass	Legs, artificial	Aug. 22, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
49,529	Jewett, George B	Salem, Mass	Legs, artificial	Aug. 22, 1865.
51,593	Jewett, George B	Salem, Mass	Legs, artificial	Dec. 26, 1865.
46,242	Jillson, C	Worcester, Mass	Wires on the coil, machine for pointing	Feb. 7, 1865.
47,954	Jillson, C	Worcester, Mass	Wire-pointing machine	May 30, 1865.
47,955	Jillson, C	Worcester, Mass	Wire, machine for pointing	May 30, 1865.
48.283	Jillson, C	Worcester, Mass	Wire-pointing machine	June 20, 1865.
50,478	Jillson, C	Worcester, Mass	Harrows	Oct. 17, 1865.
47,730	Jincks, Melvin	Danville, N. Y	Mop	May 16, 1865.
2,020	Jochum, John	Brooklyn, N. Y	Pulley brake (Reissue)	July 4, 1865.
47,956	Johanning, Lewis W., jr	San Francisco, Cal	Wire-cutting machine	May 30, 1865.
2,058	Johnson, Benjamin F., assignor to Wager & Falls	Troy, N. Y	Stove (Design)	May 9, 1865.
	Johnson, Charles D. (*See* Huson, Edgar, assignor.)			
49,761	Johnson, Charles F., jr	Owego, N. Y	Ploughs, steam	Sept. 5, 1865.
47,360	Johnson, Charles H., assignor to self and Charles E. Woodman	Boston, Mass	Horseshoe and calks, detachable	Apr. 18, 1865.
47,495	Johnson, Charles H., assignor to self and Charles E. Woodman	Boston, Mass	Horseshoes and calks	Apr. 25, 1865.
48,340	Johnson, Charles H., assignor to self and Eugene Woodman	Boston, Mass	Burner, gas, Argand	June 20, 1865.
50,826	Johnson, Charles W	Waterbury, Conn	Presses, power	Nov. 7, 1865.
49,034	Johnson, Charles W., assignor to Hiram Dailey and S. Atwater	Waterbury, Conn	Drills, rock	July 25, 1865.
47,259	Johnson, Danforth	Chicago, Ill	Churn-dashers	Apr. 11, 1865.
48,950	Johnson, E., jr	Cleveland, Ohio	Skate	July 25, 1865.
	Johnson, E. C., and S. P. Ochiltree. (*See* Ochiltree & Johnson.)			
45,832	Johnson, Frank G	Brooklyn, N. Y	Bed bottom	Jan. 10, 1865.
51,725	Johnson, Gallatin	Decorah, Iowa	Planting, machine for marking corn ground for	Dec. 26, 1865.
	Johnson, Geo, and Daniel Stanley. (*See* Stanley & Johnson.)			
47,424	Johnson, Henry	Pittsburg, Pa	Engines, steam	Apr. 25, 1865.
47,310	Johnson, Isaac	Lodi Station, Ill	Lightning conductors	Apr. 18, 1865.
	Johnson, J. A., *et al.* (*See* Burrill, J., assignor.) Reissue.			
46,677	Johnson, James L	Ashburnham, Mass	Lathe, engine	Mar. 7, 1865.
	Johnson, Job, and William Davis. (*See* Davis & Johnson.)			
49,414	Johnson, John	New York, N. Y	Valves, steam	Aug. 15, 1865.
50,132	Johnson, John	Saco, Maine	Turpentine, spirits of, manufacture of	Sept. 26, 1865.
50,659	Johnson, John, assignor to self and Howard Tilden	Saco, Maine	Mirrors, toilet	Oct. 24, 1865.
50,936	Johnson, John, jr., and Michael and E. J. Murray	Kalamazoo, Mich / Wyoming, N. Y	Tanning, process for	Nov. 14, 1865.
51,279	Johnson, John R., and John A. Harrison	England	Photographic panoramic views, apparatus for taking. (Patented in England September 5, 1862.)	Nov. 28, 1865.
47,731	Johnson, Josee	New York, N. Y	Jar, fruit	May 16, 1865.
48,071	Johnson, Josee	New York, N. Y	Washing machine	June 6, 1865.
47,152	Johnson, Josee, assignor to John Ward, jr	New York, N. Y	Mangle. (Antedated March 30, 1865).	Apr. 4, 1865.
46,299	Johnson, Joseph B., assignor to self and Charles Buffum	Lynn, Mass	Shoes	Feb. 7, 1865.
	Johnson, Moses A., and John H. Bloodgood. (*See* Bloodgood & Johnson.			
51,726	Johnson, Niels	Ripon, Wis	Pumps	Dec. 25, 1865.
	Johnson, Step'n, and Worden Edmister. (*See* Edmister & Johnson.)			

51,727	Johnson, W	Topsham, Maine	Desk, school	Dec. 26, 1865.
49,681	Johnson, Warren, assignor to self and Albert Thompson	Fisherville, N. H	Tethering animals, device for	Aug. 29, 1865.
47,732	Johnson, W. J	Newton, Mass	Sifter, flour	May 16, 1865.
	Johnson, W. J., and H. A. Hildreth. (*See* Hildreth & Johnson.)			
51,133	Johnson, William	Milwaukie, Wis	Dampers	Sept. 26, 1865.
50,363	Johnson, William H	Northboro', Mass	Rakes, horse	Oct. 10, 1865.
48,951	Johnson, William W	Harrison, Maine	Scraper, road	July 25, 1865.
			Ores of gold, silver, &c., mode of roasting, desulphurizing, and disintegrating.	June 20, 1865.
48,284	Johnston, Algernon K	New York, N. Y	Oil, apparatus for distilling	June 20, 1865.
48,285	Johnston, James J	Allegheny, Pa	Evaporating liquids, apparatus for. (Antedated Nov. 2, 1865)	Nov. 14, 1865.
50,935	Johnston, James J	Allegheny, Pa		
	Johnston, J. M. (*See* Cooper, Edward A., assignor.)			
47,208	Johnston, John	Alexandria, Va	Railroads, straightening rails of	Apr. 11, 1865.
46,190	Johnston, Samuel, assignor to self and Rufus L. Howard	Buffalo, N. Y	Harvesters	Jan. 31, 1865.
46,300	Johnston, Samuel, assignor to self and Rufus L. Howard	Buffalo, N. Y	Harvesters, combined rakes and reels for	Feb. 7, 1865.
51,656	Jones, Abner W., assignor to N. D. Morgan	Brooklyn, N. Y	Engines, steam, slide valves for	Dec. 19, 1865.
50,715	Jones, Albert	Buffalo, N. Y	Stamp, hand	Oct. 31, 1865.
48,020	Jones, Charles, assignor to self and Charles Hodgett	Brooklyn, N. Y	Coal-hod, ash-sifter, and slop-pail combined	May 30, 1865.
51,515	Jones, Charles, assignor to self and Charles Hodgett	Brooklyn, N. Y	Funnel	Dec. 12, 1865.
50,596	Jones, Charles, and Emma W	New Brighton, N. Y	Fire-escape	Oct. 24, 1865.
	Jones, Charles T., *et al.* (*See* Groneweg, Putte & Jones.)			
49,117	Jones, David J	Sadsbury, Pa	Drills, grain	Aug. 1, 1865.
50,302	Jones, Edward, assignor to self and E. J. Davenport	Boston, Mass	Burner, gas, and stop-cock	Oct. 3, 1865.
48,286	Jones, Edward H	West Albany, N. Y	Grates, steam furnace	June 20, 1865.
	Jones, Edwin. (*See* Tinker & Sprague, assignors.) Reissue.			
46,301	Jones, Gilbert D., assignor to self and Charles Place	New York, N. Y	Coffee roaster and grain dryer	Feb. 7, 1865.
48,409	Jones, H. K	Kensington, Conn	Lathes for turning tool handles	June 27, 1865.
46,191	Jones, Horace K., assignor to the Hart Manufacturing Company	Kensington, Conn	Squares, carpenters', machine for indicating	Jan. 31, 1865.
49,118	Jones, Isaiah T	Sandwich, Mass	Boots and shoes	Aug. 1, 1865.
47,644	Jones, James D	Pittsburg, Pa	Rakes, horse	May 9, 1865.
49,882	Jones, James D	Pittsburg, Pa	Drills, grain	Sept. 12, 1865.
49,883	Jones, James D	Pittsburg, Pa	Drills, grain, adjustable drag-bar for	Sept. 12, 1865.
50,134	Jones, James D	Pittsburg, Pa	Drills, grain	Sept. 26, 1865.
50,135	Jones, James D	Pittsburg, Pa	Drills, grain, drag-bar and teeth for	Sept. 26, 1865.
51,405	Jones, James Crafton	Wales	Coal mining machinery	Dec. 5, 1865.
1,898	Jones, John F	Rochester, N. Y	Paper and paper boards, machine for making (Reissue)	Mar. 7, 1865.
47,425	Jones, John F	Rochester, N. Y	Paper pulp, machines for grinding	Apr. 25, 1865.
49,119	Jones, John F	Rochester, N. Y	Paper board, machines for making	Aug. 1, 1865.
49,884	Jones, John F	Rochester, N. Y	Paper board, machines for making	Sept. 12, 1865.
46,803	Jones, J. H	Ironton, Ohio	Railroad chairs	Mar. 14, 1865.
47,426	Jones, J. H	New York, N. Y	Heater, gas	Apr. 25, 1865.
49,530	Jones, J. Herva	Rockton, Ill	Harvester rakes	Aug. 22, 1865.
48,410	Jones, John O	Boston, Mass	Carpet fastener	June 27, 1865.
48,690	Jones, John S	Covington, Ind	Reaping machines, binding attachments to	July 11, 1865.
49,885	Jones, Joseph	West Albany, N. Y	Car-brakes, railroad	Sept. 12, 1865.
50,597	Jones, Joshua W	Harrisburg, Pa	Book-clamp. (Antedated April 27, 1865)	Oct. 24, 1865.
	Jones, O. B. (*See* Lockwood, R. G., assignor.)			
51,280	Jones, Richard	England	Preserving animal and vegetable substances, method of	Nov. 28, 1865.
48,072	Jones, Robert V	Canton, Ohio	Meat crusher	June 6, 1865.
49,762	Jones, Robert V	Canton, Ohio	Meat cutter	Sept. 5, 1865.
2,055	Jones, Robert V	Canton, Ohio	Meat cutter (Reissue)	Aug. 22, 1865.
49,276	Jones, Samuel F	St. Paul, Minn	Ditching machine	Aug. 8, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
49,531	Jones, Samuel K	New Haven, Conn	Photographic printing frame	Aug. 22, 1865.
	Jones, Thomas. (*See* Chesnut, Samuel, assignor.)			
2,161	Jones, Thomas D	Cincinnati, Ohio	Lincoln, Abraham, bust of (Design)	Aug. 8, 1865.
48,870	Jones, Thomas J., assignor to self, G. Wettengell, and J. D. Richards.	West Pittsburg, Pa	Boilers, steam	July 18, 1865.
	Jones, Thomas W. (*See* Richards, Stephen M., assignor.)			
46,005	Johnson, Julius	Baltimore, Md	Metallic filings, apparatus for separating	Jan. 24, 1865.
50,435	Jordan, Augustus	Washington, D. C	Mails on railroad cars, apparatus for receiving and delivering	Oct. 10, 1865.
	Jordan, Charles. (*See* Baker, F. M., assignor.)			
45,721	Jordan, Hiram	Milford, Ohio	Planters, corn	Jan. 3, 1865.
51,059	Jordan, Horatio	Norfolk, Conn	Fastener, window and door	Nov. 21, 1865.
50,364	Jordan, Lucius, and Leander E. Smith	Southington, Conn	Wrench	Oct. 10, 1865.
	Jordan, W. H. S., and D. C. Hood. (*See* Wood, Charles A., assignor.)			
46,243	Joslyn, Benjamin F	Stonington, Conn	Fire-arms, revolving	Feb. 7, 1865.
48,073	Joslyn, Benjamin F	Stonington, Conn	Fire-arm, breech-loading	June 6, 1865.
48,287	Joslyn, Benjamin F	Stonington, Conn	Fire-arms, revolving. (Antedated June 14, 1865)	June 20, 1865.
48,288	Joslyn, Benjamin F	Stonington, Conn	Fire-arms, breech-loading	June 20, 1865.
49,277	Joy, Miles	West Greenville, Pa	Boring tools	Aug. 8, 1865.
49,415	Joyce, Joseph L	New Haven, Conn	Shoes	Aug. 15, 1865.
46,433	Joyot, Pierre, jr	France	Looms for weaving double-faced pile fabrics	Feb. 14, 1865.
45,722	Jucket, Edmund B	Pawtucket, R. I	Pumps	Jan. 3, 1865.
47,023	Judd, Albert D	New Haven, Conn	Picture nails, attaching ornamental heads to	Mar. 28, 1865.
51,594	Judd, Edward M	New Haven, Conn	Curtain fixture	Dec. 19, 1865.
	Judd, G., *et al.* (*See* Lynn, B. U., assignor.)			
50,136	Judd, Oliver S	New Britain, Conn	Fastening, sash	Sept. 26, 1865.
47,361	Judson, Alonzo R., assignor to self, E. H. Clark, and J. D. Gray	New York, N. Y	Lard, apparatus for stirring and cooling	Apr. 18, 1865.
1,889	Judson, Junius	Rochester, N. Y	Engine, steam, governors (Reissue)	Feb. 28, 1865.
	Judson, Junius	Rochester, N. Y	Engine, steam, governors (Extension)	Mar. 3, 1865.
51,190	Junkins, John H	Upper Sandusky, Ohio	Elevator, hay	Nov. 28, 1865.
50,365	Just, F., and A. Koellener	Buffalo, N. Y	Aërial cars	Oct. 10, 1865.
	Justh, Emil. (*See* Hugon, Pierre, assignor.)			
	Justh, Emil. (*See* Hugon, Pierre, assignor.)			
	Justice, Alfred B. (*See* Desalnsse, Joseph H., assignor.)			
	Justice, Philip S. (*See* Shaw, Thomas, assignor.)			
50,366	Kahler, Daniel	Elkhart, Ind	Straw cutter	Oct. 10, 1865.
46,804	Karcheskie, Xavier	Belleville, N. J	Aniline, method of preparing colors from	Mar. 14, 1865.
50,137	Karr, Corydon	Buffalo, N. Y	Mop head	Sept. 26, 1865.
	Karr, Corydon, *et al.* (*See* Steele, John, assignor.)			
51,191	Karr, Jacob	Washington, D. C	Chronometer escapements	Nov. 28, 1865.
47,733	Kassebarem, Henry L	New York, N. Y	Lantern, portable	May 16, 1865.
48,952	Kathan, Charles	Hardin, Iowa	Stove-pipe dampers	July 25, 1865.
46,474	Kaufman, Daniel	Boiling Springs, Pa	Threshing machine and straw cutter combined	Feb. 21, 1865.
48,559	Kaufman, David H	Kokomo, Ind	Grease from slush, apparatus for separating	July 4, 1865.
50,827	Kauser, Joseph E	New York, N. Y	Bridges	Nov. 7, 1865.

48,074	Kavanagh, John H	Joliet, Ill	Port-hole elosers, submarine	June 6, 1865.
49,532	Kaylor, Edward	Pittsburg, Pa	Bolt machines	Aug. 22, 1865.
50,138	Kaylor, Edward	Pittsburg, Pa	Tools, boring, coupling shafts of	Sept. 26, 1865.
50,139	Kaylor, Edward	Pittsburg, Pa	Guns, machine for finishing the cascable of	Sept. 26, 1865.
50,598	Kaylor, Edward	Pittsburg, Pa	Cannon, machine for turning rim bases of	Oct. 24, 1865.
50,599	Kaylor, Edward	Pittsburg, Pa	Bolt-heading machines	Oct. 24, 1865.
48,561	Keane, John	New York, N. Y	Heater, water, laundry	July 4, 1865.
50,873	Keane, John, assignor to self and William J. Snyder	New York, N. Y	Washing machine	Nov. 7, 1865.
51,439	Kearring, E. G	New York, N. Y	Dental purposes, method of preparing gold for	Dec. 12, 1865.
47,957	Keating, Paul W	Norwich, Conn	Leather, composition for blacking	May 30, 1865.
50,995	Keats, John, and William S. Clark	England	Sewing machines	Nov. 14, 1865.
45,833	Keck, Adam	Montgomery, Ill	Cultivators	Jan. 10, 1865.
50,874	Keek, Rudolph, assignor to Simon Baehe & Co	New York, N. Y	Mirrors, manufacturer of	Nov. 7, 1865.
45,834	Keeler, Joel F	Pittsburg, Pa	Car trusses, railroad, mode of eonstrueting	Jan. 10, 1865.
2,031	Keeler, Joel F	Pittsburg, Pa	Car, railroad, for transporting oil and other liquids, eonstructing. (Reissue.)	July 18, 1865.
48,181	Keeler, Samuel	Lancaster, Pa	Wood-bending machines	June 13, 1865.
47,109	Keeler, W. F	La Salle, Ill	Governors	Apr. 4, 1865.
	Keen, J. M. and G. W. (*See* Robbins, Richard C., assignor.)			
46,244	Keen, Morris L., and Hugh Burgess	Rogers Ford, Pa	Alkaline solutions, apparatus for evaporating and ealeining	Feb. 7, 1865.
50,937	Keenan, Philip, and Edward O'Connor	Chester Township, Pa. West Pittsburg, Pa	Furnace, puddling. (Antedated August 26, 1865)	Nov. 14, 1865.
45,835	Keene, George A	Newburyport, Mass	Paddle-wheel, feathering	Jan. 10, 1865.
49,416	Keener, Charles H	United States navy	Boilers, steam, seale borer for	Aug. 15, 1865.
	Keeney, Fielding H., and Jas. A. Craven. (*See* Craven & Keeney.)			
49,631	Keeney, Hiram	Potter Centre, N. Y	Cheese-eurd eutters	Aug. 29, 1865.
48,182	Keese, R	Cardington, Ohio	Churns	June 13, 1865.
50,828	Keith, Albert	Lisbon, Ill	Ploughs, sulky	Nov. 7, 1865.
49,886	Keith, Eli, and Barelay Thorn	La Fountain, Ind	Tanning, composition for	Sept. 12, 1865.
	Keith, George H. (*See* Ingersoll, Simon, assignor.)			
48,691	Keith, Horace M	Commeree, Mieh	Pumps	July 11, 1865.
50,008	Kelleher, Timothy J	Boston, Mass	Shoe-lacing	Sept. 19, 1865.
49,887	Keller, Charles M., and James Henderson	New York, N. Y Brooklyn, N. Y	Ice, manufacture of	Sept. 12, 1865.
49,120	Keller, Franeis	New York, N. Y	Bedstead sofa	Aug. 1, 1865.
46,364	Keller, John F	Greencastle, Pa	P'anters, seed	Feb. 14, 1865.
50,140	Keller, John F	Greencastle, Pa	Drills, wheat	Sept. 26, 1865.
46,565	Keller, Moses A	York County, Pa	Harvesters, rakes for	Feb. 28, 1865.
48,871	Keller, Sebastian, assignor to self and Jacob L. Good	Elizabethtown, Pa	Seeder and cultivator, combined	July 18, 1865.
51,728	Kelly, L. W	Brunswick, Ohio	Steel springs, &e., eompound for tempering	Dec. 26, 1865.
48,562	Kellogg, Clement A	Elyria, Ohio	Planters, corn	July 4, 1865.
51,595	Kellogg, D	Jaekson, Mich	Washing machine	Dec. 19, 1865.
48,183	Kellogg, D. J	Rochester, N. Y	Clothes-dryer	June 13, 1865.
47,898	Kellogg, E. C. C., assignor to self and James E. Coleman	Hartford, Conn	Screw-eutting dies, stocks for holding	May 23, 1865.
47,899	Kellogg, E. C. C., assignor to self and James E. Coleman	Hartford, Conn	Tool for opening boxes	May 23, 1865.
47,958	Kellogg, George D	Troy, N. Y	Strap, shoulder, slide	May 30, 1865.
50,420	Kellogg, Henry, assignor to self and Wallaee & Sons	New Haven, Conn	Springs, flat wire	Oct. 10, 1865.
50,716	Kellogg, J. M	Duquoin, Ill	Tire-shrinking machine	Oct. 31, 1865.
46,678	Kellogg, O. W	Ripon, Wis	Broom	Mar. 7, 1865.
	Kellogg, Smith M. (*See* Burr, Theodore, assignor.)			
49,888	Kelly, Daniel	Grand Rapids, Mich	Window blinds, machine for wiring	Sept. 12, 1865.
	Kelly, De Milt & Co. (*See* Boardman, Horace, assignor.)			

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,427	Kelly, James	Troy, N. Y	Wool, machine for oiling	Apr. 25, 1865.
46,111	Kelly, Oliver A., and Estus Lamb	Slatersville, R. I	Engine, steam, governors	Jan. 31, 1865.
	Kelly, Oliver S., *et al.* (*See* Whiteley, Fassler & Kelly.)			
46,112	Kelly, Robert	Tuscola, Ill	Gates	Jan. 31, 1865.
50,968	Kelly, Thomas J	New York, N. Y	Stoves, gas-burner for	Nov. 14, 1865.
51,388	Kelsey, Albert, assignor to self and Amos Brown	Charlestown, Mass	Lathes, prism	Dec. 5, 1865.
48,953	Kelsey, Edward	Centre Brook, Conn	Paper knife handle	July 25, 1865.
47,734	Kelty, Gibbons L	New York, N. Y	Window-shades	May 16, 1865.
51,596	Kemp, John	Brooklyn, N. Y	Mills, grinding	Dec. 19, 1865.
50,939	Kena, John	Brooklyn, N. Y	Bedstead, sofa, extension	Nov. 14, 1865.
48,692	Kendall, Edwin	New Lebanon, N. Y	Piston packing	July 11, 1865.
	Kendall, F. O., *et al.* (*See* Shaw, Samuel J., assignor.)			
	Kendall, Georgo F., and Albert Tyler. (*See* Tyler & Kendall.)			
50,717	Kendrick, W	New York, N. Y	Furnace for treating ores	Oct. 31, 1865.
50,718	Kendrick, W	New York, N. Y	Furnaces, reverberatory	Oct. 31, 1865.
51,321	Kendrick, W	New York, N. Y	Blowers, fan	Dec. 5, 1865.
45,925	Kenedy, John C	Logansport, Ind	Straw cutters	Jan. 17, 1865.
46,475	Kenison, Orin, and Andrew J. McClary	Lawrence, Mass	Looms, friction mechanism for the warp beam of	Feb. 21, 1865.
49,632	Kennard, William H., jr	Baltimore, Md	Window-shutters	Aug. 29, 1865.
	Kennedy, S. H., and H. L. Elder. (*See* Fields & Townsend, assignors.) Reissue.			
	Kennedy, S. H., and H. L. Elder. (*See* Fields & Townsend, assignors.) Reissue.			
45,836	Kennedy, Thomas	Branford, Conn	Door-knobs, screwing the necks to	Jan. 10, 1865.
	Kennelly, James. (*See* Kieffer, Antona, assignor.)			
50,009	Kenney, Elisha	Livermore, Me	Churns	Sept. 19, 1865.
	Kent, Edward R. (*See* Wadhams, Edward, assignor.)			
50,829	Kent, Henry W	Battle Creek, Mich	Marble-finishing machine	Nov. 7, 1865.
	Kenworthy, T. L., *et al.* (*See* Silvers, Aaron, assignor.)			
	Kenyon, William		Nuts, washers, machine for making (Extension)	
49,533	Kepner, Benjamin H., assignor to self and A. L. Brink	Nora, Ill	Threshing machines	Aug. 22, 1865.
	Kern, Wm., and B. H. McNulty. (*See* McNulty & Kern.)			
	Kershaw, Robert. (*See* Eccles, James, assignor.)			
47,552	Ketcham, H. C	Bloomfield, N. J	Toy	May 2, 1865.
48,954	Ketcham, William Jay	Washington, D. C	Mails and packages on railroad cars, mode of receiving and delivering.	July 25, 1865.
46,245	Ketcham, Charles	Penn Yan, N. Y	Corn sheller. (Antedated January 29, 1865)	Feb. 7, 1865.
	Kidder, Francis D. (*See* Thorpe, James E., assignor.)			
	Kidder, Z. B., and R. A. Leeper. (*See* Leeper & Kidder.) Reissue.			
48,339	Kieffer, Antona, assignor to self and James Kennelly	Buffalo, N. Y	Screw engines, devices for releasing	June 20, 1865.
47,829	Kilbourn, Edward E	New Brunswick, N. J	Knitting machines. (Patented in France January 6, 1864)	May 23, 1865.
50,875	Kilbourn, Hiram, assignor to self and Sylvester P. Babcock	Waterloo, Iowa	Air engines, hot	Nov. 7, 1865.
51,060	Kilgour, J. G	Brooklyn, N. Y	Cement for steam joints	Nov. 21, 1865.
46,606	Killacky, Martin, assignor to self and J. G. Rouse	Philadelphia, Pa	Collar, horse, and hames	Feb. 28, 1865.
51,460	Killin, Patrick	Mount Helpley, Ohio	Washing machine	Dec. 12, 1865.

46,758	Kilmer, Josiah, assignor to self and A. Kilmer	Barnersville, N. Y	Ploughs	Mar. 7, 1865.
47,835	Kimball, Hiram A., and Andrew J. Lawrence	Philadelphia, Pa	Arms, artificial	May 23, 1865.
45,837	Kimball, John J	Naperville, Ill	Machinery, treadles for operating	Jan. 10, 1865.
47,836	Kimball, J. W., and John Mahady	Boston, Mass / Cambridge, Mass	Supporters, shoulder	May 23, 1865.
49,121	Kimball, Philip H	Prophetstown, Ill	Planters, corn	Aug. 1, 1865.
49,278	Kimball, Wm. B	Peterboro', N. H	Stoves, cooking	Aug. 8, 1865.
46,805	Kimball, Wm. H	Lynn, Mass	Shoe-shanking machine	Mar. 14, 1865.
48,693	Kimmey, E. D., and Caleb Wright	Philadelphia, Pa	Glass cases, construction of	July 11, 1865.
48,694	Kindleberger, T. J	Springfield, Ohio	Water wheels	July 11, 1865.
49,534	Kindley, Joel	Oskaloosa, Iowa	Sorghum evaporator	Aug. 22, 1865.
50,600	King, Charles A., and Otis A. Smith	Middletown, Conn	Washers, tools for cutting	Oct. 24, 1865.
47,959	King, D. A., and V. N. Gardener	Lexington, Ky	Vehicles, attaching and detaching tops of	May 30, 1865.
47,553	King, George W	Greenville, N. Y	Rakes, hay, horse	May 2, 1865.
47,024	King, Gideon	Eminence, Ky	Drills, wheat	Mar. 28, 1865.
50,367	King, H. A. and N. H., and F. S. Walker	Nevada, Ohio	Beehives	Oct. 17, 1865.
48,955	King, J. D	Cincinnati, Ohio	Pressing tobacco, machine for	July 25, 1865.
49,889	King, James M	Quincy, Minn	Reapers, binding attachment to	Sept. 12, 1865.
	King, Kendall W., and Thos. C. Hargrave. (*See* Hargrave & King.)			
49,703	King, Kendall Wm., and Thomas C. Hargrave	Boston, Mass	Railroad rail joints	Sept. 5, 1865.
49,633	King, L	East Cleveland, Ohio	Lightning-rods, joints for	Aug. 29, 1865.
50,601	King, Samuel U	Windsor, Vt	Wood, machine for bending	Oct. 24, 1865.
	King, Sidney D., and Benjamin P. Lamason. (*See* Lamason & King.)			
51,322	King, Watson	Springfield, Ill	Rakes, horse	Dec. 5, 1865.
51,530	King, William	Hopewell, New Brunswick	Penman's assistant	Dec. 12, 1865.
47,428	King, Wm. Haskell	Troy, N. Y	Chuck, universal	Apr. 25, 1865.
48,563	King, William H	Philadelphia, Pa	Engines, oscillating	July 4, 1865.
50,141	King, W. H. L	Princeton, Iowa	Cultivators	Sept. 26, 1865.
	King, Wm. S., *et al.* (*See* Blackie, John, assignor.)			
45,723	Kingman, John W	North Bridgewater, Mass	Roofing	Jan. 3, 1865.
47,429	Kinman, Ira	Freeport, Ill	Gates, farm, hanging and latching	Apr. 25, 1865.
46,365	Kinman, Seth	Humboldt, Cal	Rifleman, arm supporter for	Feb. 14, 1865.
47,110	Kinnard, William J., and B. Dreher	Cleveland, Ohio	Melodeons	Apr. 4, 1865.
50,142	Kinne, Charles W	Cortland, N. Y	Well-tubes, mode of sinking	Sept. 26, 1865.
51,192	Kinsey, J. I	South Easton, Pa	Railroad turn-table	Nov. 28, 1865.
49,417	Kintz, Joseph	West Meriden, Conn	Lanterns	Aug. 15, 1865.
47,111	Kipe, Hiram	Thornbury, Pa	Stove-pipe dampers	Apr. 4, 1865.
48,411	Kipp, Anthony	Brooklyn, E. D., N. Y	Kettle, tea	June 27, 1865.
	Kirby, William A. (*See* Osborne, David M., assignor.)			
	Kirby, William A. (*See* Osborne, David M., assignor.)			
51,193	Kirchof, Charles	Newark, N. J	Telegraphs, magnetic	Nov. 28, 1865.
51,261	Kirchof, Charles, assignor to self and Leonard I. Sleaitry	Newark, N. J	Telegraphs, magnetic	Nov. 28, 1865.
45,926	Kirk, William A. L	Hamilton, Ohio	Sod-cutter	Jan. 17, 1865.
49,279	Kirk, William A. L	Hamilton, Ohio	Sawing-machines	Aug. 8, 1865.
48,818	Kirkpatrick, Charles A	Somerville, Mass	Roofing bracket	July 18, 1865.
49,956	Kirkpatrick, Charles A	Somerville, Mass	Paddle-wheel	July 25, 1865.
49,890	Kirkwood, J. H	Cleveland, Ohio	Chimney-caps	Sept. 12, 1865.
51,461	Kitson, George L	Philadelphia, Pa	Car coupling	Dec. 12, 1865.
2,092	Kittle, Samuel P	Brooklyn, N. Y	Mattress, spring (Reissue.)	Oct. 17, 1865.
51,061	Kittle, Samuel P	Brooklyn, N. Y	Bed-bottom, spring	Nov. 21, 1865.
47,735	Kittleman, W. W	Bloomfield, Iowa	Hame fastening	May 16, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
46,113	Klahr, B	Bernville, Pa	Sawing and boring machine	Jan. 31, 1865.
47,645	Kleeman, M	Columbus, Ohio	Diamonds, glaziers', setting and adjusting	May 9, 1865.
50,719	Kleinschmidt, S. E	Cleveland, Ohio	Lubricators	Oct. 31, 1865.
49,891	Klett, Frederick	Philadelphia, Pa	Fertilizers, manufacture of	Sept. 12, 1865.
45,838	Kline, James, and Vroman Becker	Chicago, Ill	Threshing machines, swinging gear for	Jan. 10, 1865.
48,341	Kloenne, Wilhelm, assignor to self and G. Hubner	New York, N. Y	Bottle-stopper	June 20, 1865.
51,194	Knabeschuck, E	New York, N. Y	Wood, method of applying colors to	Nov. 28, 1865.
51,462	Knabeschuck, E	New York, N. Y	Wood, coloring and polishing	Dec. 12, 1865.
46,476	Knapp, Alex. G	New York, N. Y	Stirring and cooling, apparatus for	Feb. 21, 1865.
49,764	Knapp, Thomas K	Worcester, Mass	Scissors-sharpener	Sept. 5, 1865.
48,075	Knauer, Christian F	Pittsburg, Pa	Hinge, shutter	June 6, 1865.
48,695	Knickerbocker, John	Hartford, Conn	Damper	July 11, 1865.
49,765	Knickerbocker, J. H	Philadelphia, Pa	Tube-expanders	Sept. 5, 1865.
51,729	Knickerbocker, Willis	New Lenox, Ill	Wells, oil, electro-magnets for	Dec. 26, 1865.
	Knight, George H., and Wm. Gaskill. (*See* Gaskill & Knight.)			
46,246	Knight, Henry	Brooklyn, N. Y	Water and other pipes, tapping branch for	Feb. 7, 1865.
51,463	Knight, Sylvanus	Adel, Iowa	Traps, animal	Dec. 12, 1865.
49,535	Knight, William M., and Jonathan H. Orme	Marblehead, Mass	Hooks	Aug. 22, 1865.
46,052	Kniskern, Peter W., assignor to self and Jared G. Scott	Monce, Ill	Fence, field	Jan. 24, 1865.
46,679	Knowles, Lucius J	Warren, Mass	Weaving button-holes in fabrics, mode of	Mar. 7, 1865.
48,957	Knowlton, Homer W	Saratoga Springs, N. Y	Chains, horse	July 25, 1865.
50,720	Knowlton, Homer W	Saratoga Springs, N. Y	Hook, snap	Oct. 31, 1865.
49,122	Knowlton, John L	Philadelphia, Pa	Balls, machines for rounding and polishing	Aug. 1, 1865.
2,072	Knowlton, John L	Philadelphia, Pa	Saw-mills (Reissue.)	Sept. 12, 1865.
46,247	Knox, Angelina J	Boston, Mass	Process for preserving and restoring natural flowers	Feb. 7, 1865.
47,646	Knox, Thomas W	New York, N. Y	Check-boxes, conductors'	May 9, 1865.
49,687	Koberle, Joseph	Bavaria	Die-stock	Aug. 29, 1865.
49,766	Koch, George W	New York, N. Y	Bureau and commode	Sept. 5, 1865.
	Koch, Harry H., and Daniel Lynahan. (*See* Lynahan & Koch.)			
47,647	Koehler, Adolph	Holyoke, Mass	Saddle-tree, harness	May 9, 1865.
47,960	Koehler, Adolph	Holyoke, Mass	Saddle-tree	May 30, 1865.
	Koellener, A., and F. Just. (*See* Just & Koellener.)			
48,958	Kohn, Tobias	Hartford, Conn	Threads, device for finishing	July 25, 1865.
49,280	Kohn, Tobias	Hartford, Conn	Silk and other threads, machine for cleaning and finishing	Aug. 8, 1865.
47,430	Kolbe, G. F	Philadelphia, Pa	Jewel-case	Apr. 25, 1865.
47,431	Komp, Albert	New York, N. Y	Hat-frames, skeleton, metallic	Apr. 25, 1865.
48,412	Komp, Albert	New York, N. Y	Hat-frames	June 27, 1865.
49,767	Komp, Albert	New York, N. Y	Hat-ventilators	Sept. 5, 1865.
50,721	Komp, Albert	New York, N. Y	Springs, die for curving	Oct. 31, 1865.
49,418	Koon, Henry R	Pittsfield, Mass	Well, deep, tubes	Aug. 15, 1865.
48,564	Korff, Charles	New York, N. Y	Fuel, artificial	July 4, 1865.
49,892	Kosinski, W. T	New York, N. Y	Knife-cleaner	Sept. 12, 1865.
48,565	Koth, Frederick	New York, N. Y	Piano-forte action	July 4, 1865.
47,311	Krackowrizer, Stephan	New York, N. Y	Matches, friction, manufacture of	Apr. 18, 1865.
48,413	Krause, Ernst J	Lancaster, Pa	Beer, process for making	June 27, 1865.

47,112	Krause. Robert	New York, N. Y	Mattress	Apr. 4, 1865.
	Krautwadel, F., and H. E. Fessel. (*See* Fessel & Krantwadel.)			
49,768	Kreusler, A	West Lebanon, N. Y	Malt, steeping, growing and drying	Sept. 5, 1865.
50,368	Kreusler, A	New Lebanon, N. Y	Petroleum, apparatus for distilling	Oct. 10, 1865.
50,876	Kreusler, Arnold, and W. T. Pelton, assignor to W. T. Pelton	New Lebanon, N. Y	Spirits, apparatus for distilling	Nov. 7, 1865.
50,602	Kriebel, George	Hosensack, Pa	Wood-bending machines	Oct. 24, 1865.
47,025	Kroeger, Werner	Milwaukie, Wis	Boiling, vessels for	Mar. 28, 1865.
48,184	Kroeger, Werner	Milwaukie, Wis	Stove-pipe drum	June 13, 1865.
48,566	Krogh, Casper	Keoghville, Wis	Seeding-machines	July 4, 1865.
49,634	Kroh, Calvin Z	Tiffin, Ohio	Curtain-knobs	Aug. 29, 1865.
49,893	Kroll, Conrad P	New York, N. Y	Hair, barbers' apparatus for brushing	Sept. 12, 1865.
49,894	Krull, William	New York, N. Y	Faucets, stop-valves for	Sept. 12, 1865.
49,419	Kuhnle, Charles F	Harrisburg, Pa	Shelves, brackets for	Aug. 15, 1865.
	Kuhns, A., *et al.* (*See* Billings, Jasper, assignor.)			
51,323	Kuhns, William Jacob	Brooklyn, N. Y	Photographic printing frame for porcelain or glass pictures	Dec. 5, 1865.
50,877	Kunkel, Frank, assignor to William B. Milne	Chicago, Ill	Soap, manufacture of	Nov. 7, 1865.
2,018	Kuntze, Edward J	New York, N. Y	Statuette (Design)	Jan. 17, 1865.
2,091	Kuntze, Edward J	New York, N. Y	Statuette of Shakspeare (Design)	June 13, 1865.
50,431	Küp, Ferdinand	Germany	Burners, gas	Oct. 10, 1865.
46,910	Kupferle, C., and J. H. Ward	Cincinnati, Ohio	Steam whistles	Mar. 21, 1865.
46,806	Kustel, Guido	Dayton, Nevada	Ores, concentrating table for	Mar. 14, 1865.
51,114	La Bar, Jesse, assignor to self and Robert McDowell	Statington, Pa	Slates, school	Nov. 21, 1865.
49,830	Labounty, Leonard J., assignor to self and Allen P. Bickford	Lowell, Mass	Looms, picker-check for	Sept. 5, 1865.
48,696	La Boyteaux, J. H., and C. A. Ashton	Jacksonville, Ill	Ploughs, gang	July 11, 1865.
47,736	Lacey, John	Chicago, Ill	Rakes, horse	May 16, 1865.
48,627	Lacey, John, assignor to Conrad Furst and David Bradley	Chicago, Ill	Cultivators	July 4, 1865.
50,010	Lacey, John, and George Watkinson	Bristol, Wis	Car-coupling. (Antedated September 10, 1865)	Sept. 19, 1865.
	Lacy, Meeker & Co. (*See* Meeker, George H., assignor.)			
	Ladd, Joseph N. (*See* English, Nathan F., assignor.)			
51,062	Ladenberger, F. D	Glenbeulah, Wis	Harness	Nov. 21, 1865.
	Ladue, George, and Joseph Hampson. (*See* Hampson & Ladue.)			
47,370	Laederich, Charles Eugene	Switzerland	Watches, winding and setting. (Pat'd in France March 18, 1864)	Apr. 18, 1865.
47,648	La France, T. S	Elmira, N. Y	Governors	May 9, 1865.
51,195	Lafreniere, O	New York, N. Y	Boots and shoes	Nov. 28, 1865.
2,035	Lagowitz, Samuel	Newark, N. J	Bag, carpet, frames (Reissue)	July 25, 1865.
49,420	Laidley, A. D	Philadelphia, Pa	Cartridge-box	Aug. 15, 1865.
51,324	Laidley, T. T. S	Springfield, Mass	Cartridges, metallic, priming	Dec. 5, 1865.
46,248	Laird, John P	Altoona, Pa	Car bumper attachments	Feb. 7, 1865.
51,063	Laird, John P	Philadelphia, Pa	Car truck, railroad	Nov. 28, 1865.
46,114	Laird, Robert S	Sandwich, Ill	Lantern frames	Jan. 31, 1865.
45,839	Lake, David	Smith's Landing, N. J	Traps, fly	Jan. 10, 1865.
49,536	Lake, Ezra B	Bridgeport, N. J	Railroad switch	Nov. 21, 1865.
46,680	Lake, John	Haydenville, Mass	Whip-socket	Mar. 7, 1865.
47,026	Lamason, Benjamin P., and Sidney D. King	Alexandria, Va	Towers, signal	Mar. 28, 1865.
	Lamasure, E., and G. G. Morton. (*See* Morton & Lamasure.)			
	Lamb, Estus, and Oliver A. Kelly. (*See* Kelly & Lamb.)			
51,389	Lamb, George A., assignor to self and Samuel Surbrug	Washington, D. C	Engines, steam, rotary	Dec. 5, 1865.
48,567	Lamb, H. A	Portland, Me	Medicine for the cure of erysipelas	July 4, 1865.
49,895	Lamb, Isaac W	Rochester, N. Y	Knitting machines, apparatus for setting up work in	Sept. 12, 1865.
50,369	Lamb, Isaac W	Rochester, N. Y	Knitting machines	Oct. 10, 1865.
51,115	Lamb, Isaac W., assignor to self and Alvah Strong	Rochester, N. Y	Knitting machine needles	Nov. 21, 1865.
	Lamb Knitting Machine Company. (*See* Sessions, Asa, jr., ass'r.)			

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
49,421	Lamb, Thomas, and John Allen	Philadelphia, Pa	Sewing machines	Aug. 15, 1865.
46,911	Lambert, T. S	Peekskill, N. Y	Envelope, letter	Mar. 21, 1865.
47,837	Lambert, T. S	Peekskill, N. Y	Window, double	May 23, 1865.
50,421	Lamont, Charles A., assignor to self and David A. Burr	New York, N. Y	Desiccating eggs, apparatus for	Oct. 10, 1865.
51,263	Lamont, Charles A., assignor to self and David A. Burr	New York, N. Y	Preserving eggs	Nov. 28, 1865.
47,432	La Mothe, B. J	New York, N. Y	Pen, fountain	Apr. 25, 1865.
49,896	Lamoureux, Frederick	Binghamton, N. Y	Valise, travelling	Sept. 12, 1865.
	Lamson and Goodnow Manufacturing Company. (*See* Goodnow, A. F., assignor.) Design.			
	Lamson, F. H., and Wm. W. Woodruff. (*See* Pond, Alvin, ass'r.)			
48,414	Lancaster, Isaac J	Vancouver, W. T	Hoisting and lowering apparatus	June 27, 1865.
	Landell, J. W., *et al.* (*See* Davies, Robert H., assignor.)			
	Landenberger, M. (*See* Roder, Conrad, assignor.)			
	Landers and Smith Manufacturing Company. (*See* Ames, M. C., assignor.)			
46,427	Landes, John S., assignor to self and Henry G. Halbach	Lancaster, Pa	Boot-crimping machine	Feb. 14, 1865.
51,262	Landfear, William R., assignor to David Whittemore	Hartford, Conn	Pegging jacks	Nov. 28, 1865.
46,477	Lane, Benjamin J	South Framingham, Mass	Inhaling pure air, apparatus for	Feb. 21, 1865.
51,196	Lane, Edward	Philadelphia, Pa	Carriages, wagons, &c	Nov. 28, 1865.
48,289	Lane, John W	Newton, N. Y	Stove, wood, base burning	June 20, 1865.
47,649	Lane, William E., assignor to George P. Marshall	Peekskill, N. Y	Stove, coal Kingsbury's	May 9, 1865.
46,115	Lang, Charles	Worcester, Mass	Paper, lace, machine for making	Jan. 31, 1865.
	Lang, E. M., and E. P. Furlong. (*See* Furlong & Lang.)			
47,681	Lang, Edward M., and J. Gilman, assignors to selves, Joseph L. Winslow, and E. Hersey.	Portland, Me	Lamps	May 9, 1865.
51,531	Lang, Frederick, and Charles A. Frey	Austria Styria	Iron, process for smelting	Dec. 12, 1865.
	Langdon, W. G., *et al.* (*See* Gray, J., assignor.)			
50,996	Langen, Eugene	Russia	Grates, furnace	Nov. 14, 1865.
48,342	Laning, Joseph H., and Veron Fletcher, ass'rs to Veron Fletcher	Philadelphia, Pa	Boats, folding, sectional	June 20, 1865.
50,370	Lanszweert, Louis	San Francisco, Cal	Matches, friction, composition for	Oct. 10, 1865.
	Lapham, Allen, and John Bibby. (*See* Bibby & Lapham.)			
47,433	Lapham, Andrew F	New York, N. Y	Washing machine	Apr. 25, 1865.
	Larabee, William J., and Benjamin F. (*See* Blood, Abijah E., and Josiah B., assignors.)			
48,290	Larcher, Edwin B	New York, N. Y	Intagliotype plates. (Antedated April 5, 1865)	June 20, 1865.
48,697	Larcher, Edwin B	New York, N. Y	Flour and meal for transportation, method of preparing. (Antedated June 28, 1865.)	July 11, 1865.
	Larder, W. (*See* Wyatt, Robert, assignor.)			
51,197	Large, G. W	Yellow Springs, Ohio	Washing machine	Nov. 28, 1865.
	Larvery, Barnard. (*See* White, Albert M., assignor.)			
2,051	Lash, John S	Philadelphia, Pa	Washing machine (Reissue)	Aug. 15, 1865.
2,052	Lash, John S	Philadelphia, Pa	Washing machine (Division B of reissue)	Aug. 15, 1865.
49,635	Lash, John S	Philadelphia, Pa	Washboard	Aug. 29, 1865.
49,769	Lassell, William	New York, N. Y	Lamps	Sept. 5, 1865.
46,366	Latcher, J. W	Northville, N. Y	Car brakes, railroad	Feb. 14, 1865.

49,123	Latham, O. B	Seneca Falls, N. Y	Well boring, drills for	Aug. 1, 1865.
49,281	Latham, O. B	Seneca Falls, N. Y	Drills, rock	Aug. 8, 1865.
51,325	Latham, Obadiah B	Seneca Falls, N. Y	Wells, oil, grapple tongs for	Dec. 5, 1865.
51,730	Latham, Obadiah B	Seneca Falls, N. Y	Pumps, sand	Dec. 26, 1865.
	Lathrop, C. C. (*See* Imlay, Charles G., assignor.)			
	Lathrop, C. C., *et al.* (*See* Quann & Smith, assignors.)			
	Latourette, David L		Presses, oil (Extension)	
46,478	Lauback, Isaac S	New York, N. Y	Drilling machine	Feb. 21, 1865.
50,479	Laumont, Emil E	New York, N. Y	Awning	Oct. 17, 1865.
49,537	Laurence, Charles L	New York, N. Y	Floor cloths, manufacture of	Aug. 22, 1865.
47,778	Laurent, Pierre M. A	France	Sextants	May 16, 1865.
	Laus, Garrett A. (*See* Ward, James, assignor.)			
48,568	Lautenschlager, Gustav	New York, N. Y	File, paper	July 4, 1865.
	Lavery, Bernard. (*See* Jennings, H. D., assignor.)			
1,858	Lavis, Charles H	Philadelphia, Pa	Cartridge cases, metallic, machine for loading (Reissue)	Jan. 31, 1865.
48,291	Lavis, Charles H	Philadelphia, Pa	Damper, self-regulating. (Antedated March 15, 1865)	June 20, 1865.
	Lavo, Jacob J., and John G. Gansz. (*See* Gansz & Lavo.)			
51,064	Law, Theodore C	Green Island, N. Y	Broiler and toaster	Nov. 21, 1865.
	Lawrence, Andrew J., and Hiram A. Kimball. (*See* Kimball & Lawrence.)			
	Lawrence, Benjamin and Phineas. (*See* Hicks, Franklin L., ass'r.)			
	Lawrence, Bradley and Pardee. (*See* Gregory, George, assignor.)			
	Lawrence, De Witt C., *et al.* (*See* Sabin, H. W., ass'r.) Reissue.			
	Lawrence, De Witt C., *et al.* (*See* Sabin, H. W., ass'r.) Reissue.			
	Lawrence, De Witt C., *et al.* (*See* Sabin, H. W., ass'r.) Reissue.			
	Lawrence, De Witt C., *et al.* (*See* Sabin, H. W., ass'r.) Reissue.			
	Lawrence, George A., and Edward J. Frost. (*See* Frost & Lawrence.)			
50,303	Lawrence, M. D., assignor to self and George K. Fox	Springfield, Mass	Box openers	Oct. 3, 1865.
48,021	Lawrence, P., and G. Jefferys, ass'rs to selves and Benj. Lawrence	New York, N. Y	Press, copying	May 30, 1865.
48,569	Lawson, Benjamin J	New York, N. Y	Buckle	July 4, 1865.
46,912	Lawson, Henry S	Baltimore, Md	Oyster dredges, winders for	Mar. 21, 1865.
46,249	Lawson, James A	Troy, N. Y	Damper, ventilating and check draught for	Feb. 7, 1865.
46,250	Lawson, James A	Troy, N. Y	Heaters for building	Feb. 7, 1865.
48,076	Lawton, G. C	Syracuse, N. Y	Car coupling	June 6, 1865.
49,770	Lawton, William	New York, N. Y	Cars, railway, mode of starting	Sept. 5, 1865.
46,850	Lay, John L., assignor, through mesne assignments, to Donald McKay.	Buffalo, N. Y	Torpedoes, &c., apparatus for operating	Mar. 14, 1865.
	Lay, John L., and William W. W. Wood. (*See* Wood & Lay.)			
	Lay, John L., and William W. W. Wood. (*See* Wood & Lay.)			
	Lay, John L., and William W. W. Wood. (*See* Wood & Lay.)			
	Lay, John L., and William W. W. Wood. (*See* Wood & Lay.)			
	Lay, John L., and William W. W. Wood. (*See* Wood & Lay.)			
	Lazell, E. D., and E. L. Perry. (*See* Perry & Lazell.)			
47,838	Leach, George	Elmira, N. Y	Fans, rotary	May 23, 1865.
47,839	Leach, George	Elmira, N. Y	Mills, fanning	May 23, 1865.
45,724	Leach, Z. P	Danbury, Conn	Docks, lifting	Jan. 3, 1865.
46,913	Lear, Peter	Medford, Mass	Ventilator	Mar. 21, 1865.
	Leavenworth, O. B. (*See* Wheelock, Luke, assignor.)			
46,914	Leavitt, Charles	Cleveland, Ohio	Key, guard lock	Mar. 21, 1865.
49,897	Leavitt, S. F	North Fairfield, Ohio	Hay forks, horse	Sept. 12, 1865.
46,859	Lebeau, Jacob	Cincinnati, Ohio	Moulders' tables	Mar. 14, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Leckie, R., *et al.* (*See* Macfarlane, Thomas, assignor.)			
47,554	Lecky, Robert H	Alleghany, Pa	Tools, boring, coupling shafts of	May 2, 1865.
47,555	Lecky, Robert H	Alleghany, Pa	Tools, boring, coupling shafts of	May 2, 1865.
47,961	Lecky, Robert H	Alleghany, Pa	Tools, oil, jars for	May 30, 1865.
2,027	Lecky, Robert H	Alleghany, Pa	Railways, street, trucks for (Reissue)	July 11, 1865.
50,011	Lecompte, Samuel D	Leavenworth, Kansas	Cans, sealed and other, instrument for opening	Sept. 19, 1865.
2,108	Leconte, Adolph	New York, N. Y	Lincoln, Abraham, medallion of (Design)	July 4, 1865.
49,422	Le Count, Charles W	Norwalk, Conn	Valves, governor	Aug. 15, 1865.
50,603	Le Count, Charles W	Norwalk, Conn	Tongs, blacksmiths'	Oct. 24, 1865.
50,604	Le Count, Charles W	Norwalk, Conn	Lathe dog	Oct. 24, 1865.
	Ledger, James. (*See* Aspinwall, William, assignor.)			
	Ledyard, James R., and Edwin Thurston. (*See* Thurston & Ledyard.)			
51,597	Lee, Charles C	Washington, D. C	Whiffletree, rotating	Dec. 19, 1865.
	Lee, C. T., *et al.* (*See* Wheeler, S. H., assignor.)			
	Lee, C. T., *et al.* (*See* Wheeler, S. H., assignor.)			
	Lee, D. W. (*See* Williamson, George W., assignor.)			
48,185	Lee, Henry A	Worcester, Mass	Planing machines	June 13, 1865.
49,124	Lee, Henry A	Worcester, Mass	Journal box	Aug. 1, 1865.
51,198	Lee, James H	Charlestown, Mass	Pots, coffee	Nov. 28, 1865.
47,840	Lee, Joel	Galesburg, Ill	Gates, farm	May 23, 1865.
47,066	Lee, Joel, and Henry R., assignors to selves and W. C. Calkins	Galesburg, Ill	Mop	Mar. 28, 1865.
48,698	Lee, John	Massillon, Ohio	Gates, self-acting	July 11, 1865.
50,605	Lee, John C	Seville, Ohio	Fence and gate, field, combined	Oct. 24, 1865.
50,012	Lee, Mark	Needham, Mass	Knitting machines, stop motion for	Sept. 19, 1865.
48,186	Lee, Richard	Newark, N. J	Leather dressing machine	June 13, 1865.
46,251	Lee, Robert	Cincinnati, Ohio	Hinge, shutter	Feb. 7, 1865.
47,962	Lee, Robert	Cincinnati, Ohio	Fastening, sash	May 30, 1865.
47,963	Leeds, Joseph	Philadelphia, Pa	Furnaces	May 30, 1865.
1,996	Leeper, R. A., and Z. B. Kidder, assignors to Dills, Kern & Co	San José, Cal	Cultivators (Reissue)	June 13, 1865.
51,326	Leffel, James	Springfield, Ohio	Knife and cane strippers, combined	Dec. 5, 1865.
51,464	Lefferts, Marshall	New York, N. Y	Telegraphs, machines for punching paper for	Dec. 12, 1865.
47,212	Leffingwell, John G	Newark, N. J	Lanterns	Apr. 11, 1865.
1,931	Leffingwell, John G	Newark, N. J	Gas cocks (Reissue)	Apr. 11, 1865.
48,959	Leffler, Frederick C	Highland township, Iowa	Cultivators	July 25, 1865.
48,077	Legg, C. J	Penn Yan, N. Y	Corn husker, sheller, and cleaner. (Antedated May 28, 1865)	June 6, 1865.
51,327	Legg, Samuel P	Springfield, Mass	Pistol frames, dies for forging and shaping	Dec. 5, 1865.
51,116	Leggett, Robert, and Robert Gittus, assignors to A. B. Childs	England	Straw cutters	Nov. 21, 1865.
48,035	Leggs, William A., and George E. Desbarats	Quebec, Canada	Photo-electrotype	May 30, 1865.
50,211	Leigh, Evan	England	Carding engines	Sept. 26, 1865.
51,199	Leighton, Dominicus R. and James T	Cambridge, Mass	Washing machine	Nov. 28, 1865.
48,960	Leining, George	Roxbury, Mass	Fastener, sash	July 25, 1865.
	Leininger, Anthony, and George Matthewman. (*See* Matthewman & Leininger.)			
2,220	Leippe, Martin	Lancaster, Pa	Trade mark (Design)	Nov. 14, 1865.

	Leisenring, H. G. (*See* Hill, George J., assignor.)			
	Leisenring, H. G. (*See* Hill, George J., assignor.)			
48,961	Leitch, Archibald	Ryegate, Vt	Sap spouts	July 25, 1865.
47,650	Leland, Edwin A	New York, N. Y	Stove, gas cooking. (Antedated April 26, 1865)	May 9, 1865.
46,527	Leland, Edwin A., assignor to Radcliffe B. Lockwood	New York, N. Y	Heater, gas, or blow pipe for heating soldering irons	Feb. 21, 1865.
46,479	Lelzelter, John Philip	Lancaster, Pa	Wood-bending machines	Feb. 21, 1865.
45,725	Lemm, Hiram	Leonidas, Mich	Stump extractors	Jan. 3, 1865.
47,556	Lemme, Ferdinand and Charles	San Francisco, Cal	Belt buckle	May 2, 1865.
47,209	Lemon, John K	Alleghany, Pa	Brick, machine for pressing	Apr. 11, 1865.
46,915	Lenker, Samuel, and Hallam H. Spencer	Philadelphia, Pa	Paper stuff, apparatus for washing	Mar. 21, 1865.
51,731	Lenox, E. S	New York, N. Y	Diggers, potato	Dec. 26, 1865.
46,807	Le Pelley, Nicholas D	Cleveland, Ohio	Rudder	Mar. 14, 1865.
48,292	Leonard, Joseph	Wilmington, Ohio	Latch, gate	June 20, 1865.
49,958	Leonhardt, A. S. L	Prussia	Aniline colors for dyeing and printing, method of preparing	Sept. 12, 1865.
	Lesley, A. M. (*See* Caldwell, Elijah J., assignor.)			
2,092	Letchworth, John	Philadelphia, Pa	Lamp chimney (Design)	June 13, 1865.
46,367	Letellier, Joseph F	Grand Rapids, Mich	Water wheels	Feb. 14, 1865.
	Letmate, F. W., and L. Francis. (*See* Francis and Letmate.) Reissue.			
47,737	Le Van, W. Barnet	Philadelphia, Pa	Pumps	May 16, 1865.
45,927	Levington, Robert	Monroe, Mich	Bumper springs	Jan. 17, 1865.
47,738	Levy, Judah	Philadelphia, Pa	Skirts, hoop	May 16, 1865.
47,900	Lewis, E. H., assignor to self and N. Baldwin	Kingston, N. Y	Stone, machine for polishing and dressing	May 23, 1865.
48,078	Lewis, G. R	Ashtabula, Ohio	Tallying lumber, &c., machines for	June 6, 1865.
51,732	Lewis James, assignor to Nelson Bacon	Wellington, Ohio	Press	Dec. 26, 1865.
47,210	Lewis, Joshua O	Worcester, Mass	Carding cylinders, clamps for stretching card clothing upon	Apr. 11, 1865.
45,726	Lewis, Miles K., and John C. Durbin	Iowa City, Iowa	Hay-loaders	Jan. 3, 1865.
49,423	Lewis, Miles K., John C. Durbin, and Lyman P. Lewis	Iowa City, Iowa	Hay, machines for raking and loading	Aug. 15, 1865.
49,636	Lewis, Miles K. and Lyman P	Iowa City, Iowa	Sheep while being sheared, device for holding	Aug. 29, 1865.
	Lewis, Robert S., and Charles Houghton. (*See* Houghton & Lewis.)			
50,371	Lewis, S	Tiffin, Ohio	Bolts, flour	Oct. 10, 1865.
	Lewis, T. S., and J. W. Ricker. (*See* Ricker & Lewis.)			
47,113	Lewis, Wm. J	Pittsburg, Pa	Bolts, manufacture of	Apr. 4, 1865.
46,681	Lewis, William K	Boston, Mass	Punch and die	Mar. 7, 1865.
47,965	Lewis, William K	Boston, Mass	Iron, soldering	May 30, 1865.
48,962	Leypoldt, Frederick C	Philadelphia, Pa	Button-hole cutters	July 25, 1865.
49,771	Lezat, Nelson	New Baltimore, Md	Wagon brakes	Sept. 5, 1865.
50,013	Lezott, Lewis H	Washington, D. C	Water, mode of supplying railway trains with	Sept. 19, 1865.
47,651	Libbey, H. W	Cleveland, Ohio	Shells, explosive	May 9, 1865.
48,187	Libbey, H. W	Cleveland, Ohio	Compound, incendiary	June 13, 1865.
48,188	Libby, H	Evansville, Wis	Boot, ladies'	June 13, 1865.
46,116	Lidren, Christopher	Aurora, Ill	Cultivator	Jan. 31, 1865.
47,114	Lieb, John A., and John Schmadel	Newark, N. J	Trunks, roller cleat for	Apr. 4, 1865.
	Lieb, John A., and John Schmadel (*See* Schmadel & Lieb.)			
51,655	Liebermann, Henry, assignor to self, P. Nun, J. Weil, and G. Rock.	Paducah, Ky	Tanning apparatus	Dec. 19, 1865.
49,831	Liebig, Gustavus A., assignor to Navassa Phosphate Company	Baltimore, Md	Phosphates, super, manufacture of	Sept. 5, 1865.
45,961	Liebig, G. A., and E. K. Cooper	Baltimore, Md	Process for manufacturing fertilizing phosphates	Jan. 17, 1865.
50,143	Light, Joseph F	Worcester, Mass	Lubricating journal boxes, mode of	Sept. 26, 1865.
46,006	Lightfoot, Benj. H	Philadelphia, Pa	Wool, method of oiling	Jan. 24, 1865.
46,117	Lighthall, Wm. A	New York, N. Y	Condensers, tubular	Jan. 31, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
46,252	Lighthall, Wm. A	New York, N. Y	Boilers, steam, feed water heaters for	Feb. 7, 1865.
46,253	Lighthall, Wm. A	New York, N. Y	Condenser cases	Feb. 7, 1865.
46,254	Lighthall, Wm. A	New York, N. Y	Condensers	Feb. 7, 1865.
46,438	Lighthall, Wm. A	New York, N. Y	Condensers and refrigerators	Feb. 14, 1865.
1,878	Lighthall, Wm. A	New York, N. Y	Condensers (Reissue)	Feb. 21, 1865.
1,879	Lighthall, Wm. A	New York, N. Y	Condensers, potable water (Reissue)	Feb. 21, 1865.
47,434	Lighthill, A. P	Boston, Mass	Inhaling vapors, apparatus for	Apr. 25, 1865.
50,722	Lighthill, A. P	Boston, Mass	Syringes, catarrhal	Oct. 31, 1865.
	Lightner, Samuel N. (*See* Myers, James, assignor.)			
47,964	Liller, Frederick	Baltimore, Md	Tobacco pipe	May 30, 1865.
	Lillie, Lewis	Troy, N. Y	Safes, fire-proof (Extension)	July 11, 1865.
49,282	Lillie, Lewis	Troy, N. Y	Locks	Aug. 8, 1865.
51,125	Lillie, Lewis	Troy, N. Y	Safes, vaults, and similar structures, metal, moulds for casting	Nov. 21, 1865.
2,112	Lillie, Lewis	Troy, N. Y	Safes, construction of (Reissue)	Nov. 21, 1865.
50,769	Lincoln, Annes A., assignor to Annes A. Lincoln, jr	Norton, Mass	Furnaces, cupola	Oct. 31, 1865.
	Lincoln, J. H. and S., *et al.* (*See* Hammon, T. W., assignor.)			
	Lindsay, J. P. (*See* Earle, John E., assignor.)			
	Lindsay, J. P. (*See* Goodwin, William, assignor.)			
51,465	Lindsay, J. Parker	New Haven, Conn	Wrench	Dec. 12, 1865.
50,014	Lindsay, Oliver, and Isaac Vance	Washington, Pa	Hands, artificial	Sept. 19, 1865.
47,739	Lindsay, Thomas	Montville, Conn	Paper-making machinery, rag engine of	May 16, 1865.
51,733	Link, Henry	Little Falls, N. Y	Shirt fastener	Dec. 26, 1865.
51,598	Linscott, John M	San Francisco, Cal	Drill, rock	Dec. 19, 1865.
46,682	Linton, Thomas J	Providence, R. I	Sandal, ice	Mar. 7, 1865.
46,683	Linton, Thomas J	Providence, R. I	Pumps	Mar. 7, 1865.
50,723	Linville, Jacob H., and John L. Piper	Pittsburg, Pa / Altoona, Pa	Bridges, wrought-iron	Oct. 31, 1865.
45,727	Lipman, Hymen L	Philadelphia, Pa	Eyeletting machines	Jan. 3, 1865.
	Lippincott, Thomas, and James A. Hamer. (*See* Hamer & Lippincott.)			
50,606	Lippincott, William J	Pittsburg, Pa	Saws, grinding and polishing	Oct. 24, 1865.
48,570	Lippy, David	Mansfield, Ohio	Dryer, fruit	July 4, 1865.
49,424	Lipsey, Andrew B	New York, N. Y	Tongs, gas-fitters'	Aug. 15, 1865.
49,125	Lister, David	Carbondale, Pa	Boilers, steam	Aug. 1, 1865.
	Litchfield, H. T., *et al.* (*See* Bidwell, J. A., assignor.)			
2,054	Little, Andrew	New York, N. Y	Type, letter-press (Design)	Apr. 18, 1865.
46,916	Little, James A	Danville, Ind	Fruit gatherer	Mar. 21, 1865.
46,917	Little, Lewis H	Copake, N. Y	Pot, coffee	Mar. 21, 1865.
46,422	Little R., assignor to self and Samuel Little	Canton, Ohio	Stove	Feb. 14, 1865.
2,074	Littlefield, Calvin A., assignor to self and David Boyle	Covington, Ky	Fireplaces (Reissue)	Sept. 26, 1865.
1,890	Littlefield, Dennis G	Albany, N. Y	Stove, base-burning (Reissue)	Feb. 28, 1865.
1,976	Littlefield, Dennis G	Albany, N. Y	Stove, base-burning (Reissue)	May 30, 1865.
	Littlefield, Hiram, and C. O. Morse. (*See* Estes, Samuel, assignor.)			
49,283	Littlefield, Horace	Lewis, Iowa	Scaffold	Aug. 8, 1865.
48,189	Littlefield, Joseph H	Cambridge, Mass	Sifter, flour	June 13, 1865.

48,415	Littlefield, Joseph H	Cambridge, Mass	Breeching hooks	June 27, 1865.
48,416	Littlefield, Joseph H	Cambridge, Mass	Whiffletrees	June 27, 1865.
49,898	Littlefield, Joseph H	Cambridge, Mass	Hammers	Sept. 12, 1865.
49,899	Littlefield, Joseph H	Cambridge, Mass	Damper and ventilator	Sept. 12, 1865.
51,200	Livermore, Lorenzo D	Beaver Dam, Wis	Stump-extractor	Nov. 28, 1865.
46,118	Lloyd, John A	St. Paul, Minn	Tire-shrinking machines	Jan. 31, 1865.
46,192	Lloyd, Samuel, assignor to self and William H. Freer	Washington, D. C.	Horseshoes, movable calks and toes for	Jan. 31, 1865.
	Lobdell, G. G. (*See* McClintock, William, assignor.)			
46,255	Lochman, C. L	Carlisle, Pa	Funnels	Feb. 7, 1865.
48,571	Locke, Harvey	Boston, Mass	Sifter, flour	July 11, 1865.
51,201	Locke, Harvey	South Boston, Mass	Raisins, machine for removing seeds from	Nov. 28, 1865.
49,035	Locke, Harvey, assignor to John McNutt	South Boston, Mass	Lathes, wood-turning	July 25, 1865.
51,734	Locke, Joel	Bridgeport, N. J	Jack, lifting	Dec. 26, 1865.
49,348	Locke, Sylvanus D., assignor to George G. Campbell	Janesville, Wis	Car-coupling	Aug. 8, 1865.
51,599	Locke, Sylvanus D	Janesville, Wis	Grain binders	Dec. 19, 1865.
51,600	Locke, Sylvanus D	Janesville, Wis	Grain binders	Dec. 19, 1865.
49,772	Lockwood, Edwin	Bordentown, N. J	Axle box	Sept. 5, 1865.
48,191	Lockwood, Edwin, and George W. Pitman	Bordentown, N. J	Car seats	June 13, 1865.
49,900	Lockwood, Hamilton D	Charlestown, Mass	Syringes	Sept. 12, 1865.
	Lockwood, Hamilton D. (*See* Davidson, C. H. and H. E., assignors.) Reissue.			
	Lockwood, Radcliffe B. (*See* Leland, Edwin A., assignor.)			
51,328	Lockwood, Rembrandt	Brooklyn, N. Y	Bridges	Dec. 5, 1865.
50,770	Lockwood, R. G., assignor to self and O. B. Jones	Battle Creek, Mich	Legs, artificial	Oct. 31, 1865.
46,567	Lockwood, William E	Philadelphia, Pa	Shirt bosoms, paper	Feb. 28, 1865.
1,980	Lockwood, William E	Philadelphia, Pa	Collars and cuffs, ladies' (Division B of reissue)	June 6, 1865.
1,981	Lockwood, William E	Philadelphia, Pa	Collars and cuffs, ladies' (Division C of reissue)	June 6, 1865.
1,982	Lockwood, William E	Philadelphia, Pa	Collars and cuffs, ladies' (Division D of reissue)	June 6, 1865.
1,983	Lockwood, William E	Philadelphia, Pa	Collars and cuffs, ladies' (Division E of reissue)	June 6, 1865.
	Lockwood, William E. (*See* Hunt, Walter, assignor.) Reissue.			
	Lockwood, William E. (*See* Hunt, Walter, assignor.) Reissue.			
	Lockwood, William E. (*See* Hunt, Walter, assignor.) Reissue.			
49,952	Lockwood, William E., and Henry Howson, assignors to William E. Lockwood.	Philadelphia, Pa	Collars, paper, apparatus for shaping	Sept. 12, 1865.
46,568	Loewenberg, Henry	New York, N. Y	Hats, bonnets, &c., fabric for	Feb. 28, 1865.
46,060	Loewenberg, Henry, assignor to self and Emile Granier	New York, N. Y	Barrels for holding petroleum, composition for lining	Jan. 24, 1865.
47,496	Loewenberg, Henry, assignor to self and Emile Granier	New York, N. Y	Barrels, oil, composition for lining	Apr. 25, 1865.
51,065	Loftie, Henry, and Egbert Hinnian	Syracuse, N. Y	Drill	Nov. 21, 1865.
48,237	Lofvendahl, Joseph, assignor to self and John Blomgvist	Boston, Mass	Nutmeg grater	June 13, 1865.
51,601	Logan, James R	Bellmore, Ind	Sawing machines	Dec. 19, 1865.
49,901	Lombaert, Herman J	Philadelphia, Pa	Transportation of petroleum	Sept. 12, 1865.
50,480	Lombard, C. E	Springfield, Mass	Bit stocks	Oct. 17, 1865.
	Lomont, F. T., *et al.* (*See* Brown, Ingham & Lomont.)			
47,436	Long, C. B	Worcester, Mass	Rules, gear-cutting	Apr. 25, 1865.
46,480	Long, James P	Osage, Iowa	Seeder, cultivator, and roller, combined	Feb. 21, 1865.
47,557	Long, William H	Mountain City, Col. Ter	Gold separator	May 2, 1865.
	Longan, Edward. (*See* Driver, Samuel, assignor.)			
50,607	Longley, Samuel M	Hudson, N. Y	Hoisting apparatus	Oct. 24, 1865.
47,841	Loomis, Andrew J	Madrid, N. Y	Alarm, burglar	May 23, 1865.
48,079	Loomis, C. M	Hartford, Conn	Buttons. (Antedated May 23, 1865.)	June 6, 1865.
49,425	Loomis, J. A	Fond du Lac, Wis	Casks or barrels, machine for driving hoops on to. (Antedated February 15, 1865.)	Aug. 15, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
49,284	Loomis, K. H	Baltimore, Md	Valve gear, cut-off	Aug. 8, 1865.
46,918	Loomis, William H	Fairfield, Iowa	Chaff and straw stacker	Mar. 21, 1865.
47,966	Lord, F. A	Aurora, N. Y	Evaporator	May 30, 1865.
46,119	Lord, George E	Utica, N. Y	Bed bottom, spring	Jan. 31, 1865.
46,120	Lord, Rishton, and Levi Hutton	Philadelphia, Pa	Carding engines, doffing apparatus for	Jan. 31, 1865.
	Lord, Scott. (*See* Holmes, Ira, assignor.)			
	Lorillard, Blase, *et al.* (*See* Southworth, Daniel H., assignor.)			
51,066	Loring, Charles	South Braintree, Mass	Threshold, door	Nov. 21, 1865.
46,369	Losie, Thomas M	Elmira, N. Y	Stove-pipe thimble	Feb. 14, 1865.
50,015	Lossiel, Isaac	Philadelphia, Pa	Compound, lubricating	Sept. 19, 1865.
47,312	Loth, Peter	New York, N. Y	Chandelier	Apr. 18, 1865.
49,126	Lott, Daniel	Lottsville, Pa	Car, revolving	Aug. 1, 1865.
48,190	Loucks, Wesley	Scoharie, N. Y	Cooker, egg	June 13, 1865.
49,127	Loud, Thomas	Philadelphia, Pa	Musical instruments, swell for	Aug. 1, 1865.
47,115	Loughborough, Ira E	Pittsford, N. Y	Boots and shoes, heel and toe plates for	Apr. 4, 1865.
	Loughborough, William S., and James Chase. (*See* Chase & Loughborough.)			
48,699	Loughran, Michael, assignor to self and J. B. Loughran	Pittsburg, Pa	Singletrees, method of forming blank clips for	July 11, 1865.
47,027	Louth, Adam W	Philadelphia, Pa	Offal, &c., apparatus for treating	Mar. 28, 1865.
	Loutrel, C. H. (*See* Francis, L., assignor.) Reissue.			
	Loutrel, C. H. (*See* Francis, L., assignor.) Reissue.			
	Loutrel, C. H., and L. Francis. (*See* Francis & Letmate, assignors.) Reissue.			
51,466	Lovatt, John	Newark, N. J	Skates	Dec. 12, 1865.
48,628	Love, F. M., assignor to self and Samuel C. Love	Waldron, Ind	Evaporator	July 4, 1865.
50,887	Love, Horace T	Vermillion Township, Kan.	Augers	Nov. 7, 1865.
49,128	Love, Horace W	Brooklyn, N. Y	Wrench, screw	Aug. 1 1865.
51,602	Lovegrove, Thomas J	Philadelphia, Pa	Pumps for deep wells	Dec. 19, 1865.
46,756	Lovegrove, Thomas J., assignor to self and Henry Baldwin, jr	Philadelphia, Pa	Wells, artesian, sand pumps for	Mar. 7, 1865.
46,757	Lovegrove, Thomas J., assignor to self and Henry Baldwin, jr	Philadelphia, Pa	Drills, rock	Mar. 7, 1865.
47,599	Lovegrove, Thomas J., assignor to self and Henry Baldwin, jr	Philadelphia, Pa	Wells, borer for	May 2, 1865.
47,600	Lovegrove, Thomas J., assignor to self and Henry Baldwin, jr	Philadelphia, Pa	Wells, borer for	May 2, 1865.
47,601	Lovegrove, Thomas J., assignor to self and Henry Baldwin, jr	Philadelphia, Pa	Drills, rock	May 2, 1865.
47,901	Lovegrove, Thomas J., assignor to self and Henry Baldwin, jr	Philadelphia, Pa	Pipes, casting	May 23, 1865.
48,022	Lovegrove, Thomas J., assignor to self and Henry Baldwin, jr	Philadelphia, Pa	Shot and shell, casting	May 30, 1865.
48,343	Lovegrove, Thomas J., assignor to self and Henry Baldwin, jr	Philadelphia, Pa	Wells, artesian, machine for boring	June 20, 1865.
48,344	Lovegrove, Thomas J., assignor to self and Henry Baldwin, jr	Philadelphia, Pa	Engine, steam, governors	June 20, 1865.
50,830	Lovejoy, H. F	Nineveh, N. Y	Mowing machines	Nov. 7, 1865.
2,044	Lovell, G. S	Philadelphia, Pa	Clock front (Design)	Apr. 11, 1865.
2,045	Lovell, G. S	Philadelphia, Pa	Clock front (Design)	Apr. 11, 1865.
2,190	Lovell, G. S	Philadelphia, Pa	Clock front (Design)	Oct. 10, 1865.
	Lovett, S. Ingersoll. (*See* Simonds, Warren A., assignor.)			
51,202	Lovett, T. R	Mt. Airy, Pa	Sewing machines, automatic fan for	Nov. 28, 1865.
	Low, Edward. (*See* Quinby, Ira B., assignor.)			
45,841	Low, Hosea	Waukon, Iowa	Metal, sheet, machine for cutting	Jan. 10, 1865.

47,967	Low, Hosea	Waukon, Iowa	Metal, sheet, machine for cutting	May 30, 1865.
50,481	Low, Hosea	Waukon, Iowa	Metal, sheet, machine for cutting	Oct. 17, 1865.
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
	Lowell Manufacturing Co. (*See* Ney, Elemir J., ass'or.)		Design.	
48,417	Lowerre, Thomas H.	New York, N. Y.	Hats, apparatus for attaching mourning-badges to	June 27, 1865.
48,080	Lowman, Harvey L.	Virginia City, Nevada	Picks, mining	June 6, 1865.
47,740	Lowry, Joseph L.	Pittsburg, Pa	Ordnance, construction of	May 16, 1865.
	Lowry, Joseph L., and Thomas Brown, jr. (*See* Brown & Lowry.)			
48,963	Loy, Daniel S.	Graceham, Md	Tuyere	July 25, 1865.
	Luce, Russell S., and Daniel Ward. (*See* Ward & Luce.)			
47,558	Luck, Peter	Williamsburg, N. Y.	Pulley block	May 2, 1865.
46,121	Ludke, Ferdinand	New York, N. Y.	Chair and table, folding	Jan. 31, 1865.
51,067	Lugenbell, Peter, and James S. Armstrong	Greensburg, Ind.	Ditching machine	Nov. 21, 1865.
49,773	Lugo, Orazio	New York, N. Y.	Projectiles for ordnance	Sept. 5, 1865.
50,940	Lugo, Orazio	New York, N. Y.	Fertilizer	Nov. 14, 1865.
46,684	Lummus, Thomas J.	Lynn, Mass.	Ink, red	Mar. 7, 1865.
46,685	Lunkenheimer, F.	Cincinnati, Ohio	Cocks, globe valve	Mar. 7, 1865.
49,902	Lusted, Charles	New York, N. Y.	Bolts, machine for making	Sept. 12, 1865.
48,490	Luther, T. C., assignor to self and American Flask and Cap Co.	Waterbury, Conn.	Paper bags, machines for making	June 27, 1865.
47,313	Lyman, Alfred E.	New York, N. Y.	Coffins, deodorizing	Apr. 18, 1865.
46,122	Lyman, Azel S.	New York, N. Y.	Pumps, air	Jan. 31, 1865.
47,437	Lyman, David	Middlefield, Conn.	Hay spreaders	Apr. 25, 1865.
50,482	Lyman, David	Middlefield, Conn.	Clothes wringer	Oct. 17, 1865.
49,774	Lyman, E. B	Waterbury, Conn.	Baskets	Sept. 5, 1865.
46,256	Lyman, Josiah	Lenox, Mass.	Scales, drafting	Feb. 7, 1865.
1,920	Lyman, William W	West Meriden, Conn.	Cans, fruit (Reissue)	Mar. 28, 1865.
47,314	Lynehan, Daniel, and Harry H. Koch	Buffalo, N. Y.	Shoe lasts, fastenings for blocks of	Apr. 18, 1865.
50,016	Lynch, Isaac F. A. A.	Roxbury, Mass.	Weather-strips for doors	Sept. 19, 1865.
49,349	Lyon, B. U., assignor to self, G. Judd, E. P. Whitney, and J. P. Reed.	Stamford, Conn.	Welt machine	Aug. 8, 1865.
50,372	Lyon, J. B.	Cleveland, Ohio	Lightning-rods' joints	Oct. 10, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
46,123	Lyon, Warren	New York, N. Y.	Drilling machines	Jan. 31, 1865.
46,124	Lyons, Joseph C	Auburn, N. Y.	Wells, oil, testing	Jan. 31, 1865.
46,370	Mabbett, John H	Mechanicsville, N. Y.	Railroad chairs, wrought-iron, machine for making	Feb. 14, 1865.
	Macbeth, John, and Alexander Forbes. (*See* Forbes & Macbeth.)			
	McCord, C. W., and John A. Parise. (*See* Parise & McCord.)			
	Macdaniel, Osborne. (*See* Ennis, William, assignor.)			
49,597	Macfarlane, Thomas, assignor to self, R. Leckie, and Thos. S. Hunt	Acton Vale, Canada East	Process of preparing chlorine, bleaching powder, carbonate of soda, and other products.	Aug. 22, 1865.
46,528	Macferran, Sam'l, and Stephen Ustick, ass'ors to Sam'l Macferran	Philadelphia, Pa.	Coat-and-hat rack	Feb. 21, 1865.
47,242	Macgill, Oliver P., assignor to self and Thomas Poultney	Brooklandville, Md.	Horse-shoes	Apr. 11, 1865.
2,218	Machen, William H	Toledo, Ohio	Lincoln, Abraham, monument to the memory of (Design)	Nov. 7, 1865.
	Mack, J. C., and H. W. Harkness. (*See* Harkness & Mack.)			
45,840	Mackee, James A	Boston, Mass	Dress-facing	Jan. 10, 1865.
	Mackell, Thomas. (*See* Dexter, A. G., assignor.)			
47,438	Mackerley, James E	Paint, Ohio	Photographic name plate	Apr. 25, 1865.
49,637	Mackie, Simon F	New York, N. Y.	Ores, process for treating	Aug. 29, 1865.
46,007	Mackwitz, Edward, and William Frankfurth	Milwaukie, Wis.	Stove-pipe damper	Jan. 24, 1865.
	Macneale, Neil. (*See* Dodds, William B., assignor.)			
2,224	Macneir, Leonidas, assignor to Isaac Townsend	Philadelphia, Pa.	Match safe (Design)	Dec. 5, 1865.
2,225	Macneir, Leonidas, assignor to Isaac Townsend	Philadelphia, Pa.	Match safe (Design)	Dec. 5, 1865.
2,119	Macomber, A. S., assignor, through mesne assignments, to Warren and Andrew Gale.	Chicopee Falls, Mass.	Straw cutters (Reissue)	Dec. 5, 1865.
50,941	Macotter, Joseph	Baltimore, Md.	Planking clamps	Nov. 14, 1865.
	Macy, Charles R., and Benjamin F Bates. (*See* Bates & Macy.)			
46,919	Madigan, James E	Beloit, Wis	Bolting flour, apparatus for	Mar. 21, 1865.
46,808	Maffit, W. R	Wilkesbarre, Pa.	Pipes, joints for	Mar. 14, 1865.
51,603	Magee, John	Chicago, Ill.	Elevator bucket	Dec. 19, 1865.
	Maggi, Charles, and Daniel C. Mead. (*See* Mead & Maggi.)			
51,467	Magott, L. H	Springfield, Mass.	Locks	Dec. 12, 1865.
	Maguire, Thomas, and Thomas Dutton. (*See* Dutton & Maguire.)			
	Mahady, John, and J. W. Kimball. (*See* Kimball & Mahady.)			
45,842	Mahana, John B	Benson, Vt	Gates, folding, automatic	Jan. 10, 1865.
49,775	Mahon, William C	Covington, Ky.	Hats, &c., water-proof fabrics for	Sept. 5, 1865.
47,968	Main, Thomas	Green Point, N. Y.	Boilers, steam	May 30, 1865.
50,017	Maine, David F	Mansfield, Ohio	Buckle, trace	Sept. 19, 1865.
48,293	Maine, Sebeus C	Boston, Mass.	Coal and ash sifter	June 20, 1865.
48,572	Maine, Sebeus C	Boston, Mass	Sifter, flour	July 4, 1865.
50,669	Malapert, Prosper, and Edward A. Des Courtis	France / New York, N. Y	Boilers, egg	Oct. 24, 1865.
47,362	Mallerd, William, assignor to J. D. Alvord	Bridgeport, Conn.	Burners, gas, regulator for	Apr. 18, 1865.
2,038	Mallory, Burton	New Haven, Conn	Lock, door (Design)	Mar. 14, 1865.
48,192	Mallory, O	Rochester, N. Y.	Grape box	June 13, 1865.
49,476	Mallory, Wm. H., assignor to self, N. H. Downes, and R. M. Bassett	Bridgeport, Conn.	Upholstering purposes, spring for	Aug. 15, 1865.
48,418	Maloy, James W	Boston, Mass	Engines, steam, valve gear of. (Antedated June 9, 1865)	June 27, 1865.
50,205	Maltby, Sidney, and Chas. Oborn, ass'ors to selves and Wm. H. Clark	Dayton, Ohio	Boilers, steam, injectors for	Sept. 26, 1865.

51,329	Maltby, Sidney, and Barton Pickering	Dayton, Ohio / Milton, Ohio	Valves, plug, balanced	Dec. 5, 1865.
48,193	Manger, Henry	Philadelphia, Pa	Camera, photographic, stand	June 13, 1865.
2,173	Manger, Henry	Philadelphia, Pa	Lincoln, Abraham, bust of (Design)	Sept. 19, 1865.
51,468	Manigle, Edward M	Philadelphia, Pa	Ice-cream freezers, bottom for	Dec. 12, 1865.
1,944	Manley, William R., assignor to Manley Paddle Wheel Company	New York, N. Y	Paddle-wheel, feathering (Reissue)	May 2, 1865.
48,081	Mann, Chester M	Detroit, Mich	Cars, street, propulsion of	June 6, 1865.
50,831	Mann, George, jr	Ottawa, Ill	Ventilating car-window	Nov. 7, 1865.
46,371	Mann, Henry F	Pittsburg, Pa	Metal, machine for rolling	Feb. 14, 1865.
2,013	Manning, Edward B	Cromwell, Conn	Pots, tea and coffee (Reissue)	June 27, 1865.
2,075	Manning, Edward B	Cromwell, Conn	Pots, tea and coffee (Reissue)	Sept. 26, 1865.
50,018	Manny, Abraham J	Freeport, Ill	Cultivators	Sept. 19, 1865.
51,203	Manny, Abraham J	Freeport, Ill	Harvesters	Nov. 28, 1865.
	Manny, John H., deceased, by Mary Manny, executrix	Rockford, Ill	Mowing machines and harvesters (Extension)	Sept. 22, 1865.
	Manny, John H., deceased, by Mary Manny, executrix	Rockford, Ill	Harvester frames, arrangement of joints for attaching trucks to. (Extension.)	Sept. 22, 1865.
	Manny, John H., deceased, by Mary Manny, executrix	Rockford, Ill	Harvester cutters, arrangements for controlling (Extension)	Sept. 22, 1865.
	Manser, A., and E. G. Blackslee. (*See* Blackslee & Manser.)			
51,516	Manuel, David, assignor to self and Willard Manuel	Newton, Mass	Bedsteads, springs for	Dec. 12, 1865.
50,254	Maranville, H	Akron, Ohio	Scales, platform	Oct. 3, 1865.
46,372	Marble, F. B., assignor to Ohio Tool Company	Columbus, Ohio	Plane-stocks, machines for dressing the throats in	Feb. 14, 1865.
46,686	Marble, Lansing	Vassar, Mich	Washing machine	Mar. 7, 1865.
49,638	Marcellus, Aaron	Rockford, Ill	Bolt machine	Aug. 29, 1865.
	March Brothers, Pierce & Co. (*See* Snow, George K., assignor.)			
	March Brothers, Pierce & Co. (*See* Snow, George K., assignor.)			
	March Brothers, Pierce & Co. (*See* Snow, George K., assignor.)			
	March Brothers, Pierce & Co. (*See* Snow, George K., assignor.)			
	March Brothers, Pierce & Co. (*See* Snow, George K., assignor.)			
	Marcher, Robert	West Farms, N. Y	Mouldings, &c., machinery for enamelling (Extension)	Oct. 3, 1865.
50,144	Margerum, Mahlon R	Trenton, N. J	Coffins, wooden	Sept. 26, 1865.
49,682	Margulies, B., assignor to Jesse and James W. Tyson	Austria	Chromium, salts of, manufacture of. (Patented in England September 6, 1864.)	Aug. 29, 1865.
51,330	Markham, A. S	Bushnell, Ill	Car coupling	Dec. 5, 1865.
49,285	Markillie, Thomas R	Winchester, Ill	Whiffletrees	Aug. 8, 1865.
46,687	Marks, A. A	New York, N. Y	Legs, artificial	Mar. 7, 1865.
	Marks, H. S. (*See* Slape, William, assignor.)			
46,258	Marqua, P. J	Cincinnati, Ohio	Horse, hobby	Feb. 7, 1865.
51,331	Marquard, F	Rahway, N. J	Rubber, white, manufacture of	Dec. 5, 1865.
51,332	Marquard, F	Rahway, N. J	Rubber, white, manufacture of	Dec. 5, 1865.
51,333	Marsden, Harry, and Thomas H. Blamires	England	Carding engines	Dec. 5, 1865.
46,373	Marsh, Charles W., and William W	Clinton, Ill	Harvesters	Feb. 14, 1865.
2,014	Marsh, Charles W., and William W	Clinton, Ill	Reaping machines (Reissue)	June 27, 1865.
2,015	Marsh, Charles W., and William W	Clinton, Ill	Reaping machines (Division 2 of reissue)	June 27, 1865.
49,036	Marsh, Clark, assignor to the Wheeler and Wilson Sewing Machine Company.	Bridgeport, Conn	Sewing machines, binder-guides for	July 25, 1865.
49,350	Marsh, Clark, assignor to Hotchkiss Sons	Bridgeport, Conn	Hook, snap	Aug. 8, 1865.
46,053	Marsh, Eleakim, assignor to self and Augustus Marsh	Newark, N. J	Lamps	Jan. 24, 1865.
47,439	Marsh, Roswell	Steubenville, Ohio	Cultivators	Apr. 25, 1865.
48,573	Marsh, Sylvester	Chicago, Ill	Dryer, grain	July 4, 1865.
48,964	Marsh, William S	Indianapolis, Ind	Skiving and splitting machines	July 25, 1865.
50,542	Marshall, Charles E	Nova Scotia	Anchor. (Patented in England March 6, 1865)	Oct. 17, 1865.
	Marshall, F. A., *et al.* (*See* Shaw, Samuel J., assignor.)			

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,652	Marshall, George	New York, N. Y	Pumps	May 9, 1865.
50,252	Marshall, George	Brooklyn, E. D., N. Y	Lasts	Oct. 3, 1865.
	Marshall, George P. (*See* Lane, Wm. E., assignor.)			
48,140	Marshall, John	England	Presses, oil. (Patented in England October 27, 1863)	June 6, 1865.
48,819	Marshall, Loomis G	Mokena, Ill	Drills	July 18, 1865.
45,948	Marshall, Loomis G., assignor to self and F. W. Hughes	Mokena, Ill	Grates	Jan. 17, 1865.
48,872	Marshall, Loomis G., assignor to self and F. W. Hughes	Mokena, Ill	Drills	July 18, 1865.
	Marshbank & McConkey. (*See* Smith & Brown, ass'rs.) Design.			
47,653	Marsteller, B	Wolf Creek, Pa	Liniment	May 9, 1865.
	Marston, Stanhope W	New York, N. Y	Fire-arms, revolving, trigger-operating (Extension)	Jan. 4, 1865.
	Marston, Wm. G., and L. V. Quimby. (*See* Quimby & Marston.)			
49,639	Marston, Wm. W	New York, N. Y	Stand or holder, book	Aug. 29, 1865.
47,016	Marten, G. C	Cleveland, Ohio	Watches	Apr. 4, 1865.
46,809	Martin, Benjamin G	Philadelphia, Pa	Extracts, mode of obtaining	Mar. 14, 1865.
48,771	Martin, Benj. G., assignor to self, T. M. Davis, L. H. Walton, and W. Sandford.	Philadelphia, Pa	Paddle-wheel	July 11, 1865.
49,037	Martin, Benj. G., assignor to self, T. M. Davis, L. H. Walton, and W. Sandford.	Philadelphia, Pa	Rules, carpenters'	July 25, 1865.
51,517	Martin, Benj. G., assignor to self, T. M. Davis, L. H. Walton, and W. Sandford.	Philadelphia, Pa	Calipers	Dec. 12, 1865.
51,518	Martin, Benj. G., assignor to self, T. M. Davis, L. H. Walton, and W. Sandford.	Philadelphia, Pa	Brewers, mash tun for	Dec. 12, 1865.
48,820	Martin, Edwin	Springfield, Mass	Cartridges, metallic, priming	July 18, 1865.
46,009	Martin, E. C	West Liberty, Iowa	Rakes, horse	Jan. 24, 1865.
49,903	Martin, Francis	New York, N. Y	Well, deep, packing	Sept. 12, 1865.
48,419	Martin, Henry	Springfield, Mass	Brick machine	June 27, 1865.
46,920	Martin, Joseph	New Oxford, Pa	Gate, farm	Mar. 21, 1865.
45,955	Martin, Lewis E. C	England	Boilers, steam. (Patented in England April 28, 1864)	Jan. 17, 1865.
	Martin, T. J., *et al.* (*See* Wheeler, S. H., assignor.)			
	Martin, Wm. P. (*See* Pratt, George W., assignor.)			
	Martin, Wm. W., *et al.* (*See* Renehart, Wm. D., assignor.)			
50,019	Martine, Charles F	Dorchester, Mass	Lamps. (Antedated September 10, 1865)	Sept. 19, 1865.
47,768	Martine, John, assignor to Stuart & Petersen	Philadelphia, Pa	Coal-sifter	May 16, 1865.
2,093	Martine, John, assignor to Stuart & Petersen	Philadelphia, Pa	Stove, plates of a (Design)	June 13, 1865.
2,094	Martine, John, and John Currie, assignors to Stuart & Petersen	Philadelphia, Pa	Range, portable	June 13, 1865.
	Martine, John, and James Horton. (*See* Horton & Martine.)			
	Marvill, Joseph H., and John Daley. (*See* Daley & Marvill.)			
46,257	Marvin, Walter K	New York, N. Y	Hoisting apparatus	Feb. 7, 1865.
47,842	Marvin, Walter K	New York, N. Y	Locks	May 23, 1865.
	Marvin, Walter K. (*See* Munger, Lyman F., assignor.)			
50,942	Maschka, Anton	Chicago, Ill	Ploughshares	Nov. 14, 1865.
	Mason & Hamlin. (*See* Woods, George, assignor.)			
	Mason & Hamlin. (*See* Woods, George, assignor.)			
	Mason & Hamlin. (*See* Woods, George, assignor.)			
	Mason, Charles, *et al.* (*See* Sabin, H. W. assignor.) Reissue.			

	Mason, Charles, *et al.* (*See* Sabin, H. W., assignor.) Reissue.			
	Mason, Charles, *et al.* (*See* Sabin, H. W., assignor.) Reissue.			
	Mason, Charles, *et al.* (*See* Sabin, H. W., assignor.) Reissue.			
	Mason, James S., & Co. (*See* Slocum, William F., assignor.)			
	Mason, James S., & Co. (*See* Slocum, William F., assignor.)			
45,843	Mason, John H	Brooklyn, N. Y	Breast pads, ladies'	Jan. 10, 1865.
47,211	Mason, Lewis W	Shelburne Falls, Mass	Carriages	Apr. 11, 1865.
45,803	Mason, Melchor B., assignor to C. V. De Forest, A. Howes, and G. E. Vanderburgh.	New York, N. Y	Ores, metallic, method of desulphurizing and oxidizing	Jan. 3, 1865.
45,804	Mason, Melchor B., assignor to C. V. De Forest, A. Howes, and G. E. Vanderburgh.	New York, N. Y	Furnace for desulphurizing and treating auriferous and other metallic ores.	Jan. 3, 1865.
48,700	Mason, Thomas	Boston, Mass	Vegetable slicer	July 11, 1865.
	Mason, Thomas, and Francis S. Munroe. (*See* Munroe & Mason.)			
50,117	Mason, William, assignor to E. Remington & Sons	Ilion, N. Y	Fire-arms, revolving	Nov. 21, 1865.
51,469	Masser, Jacob B	Sunbury, Pa	Fastener, sash	Dec. 12, 1865.
48,965	Massey, John	New York, N. Y	Meat chopper	July 25, 1865.
50,543	Masson, Auguste, and Pierre H. Cary	France	Penholder	Oct. 17, 1865.
	Mast, P. P., *et al.* (*See* Thomas, Mast & Harding.)			
	Mast, P. P., and J. H. Thomas. (*See* Thomas & Mast.)			
	Mast, P. P., and J. H. Thomas. (*See* Thomas & Mast.)			
	Mast, P. P., and J. H. Thomas. (*See* Thomas & Mast.)			
	Mast, P. P., and J. H. Thomas. (*See* Thomas & Mast.)			
	Mast, P. P., and J. H. Thomas. (*See* Thomas & Mast.)			
51,334	Mather, James H	Lawrenceville, Pa	Separating oats from wheat, sieves for	Dec. 5, 1865.
48,821	Mather, Orville	Newport, Ky	Carriages, children's	July 18, 1865.
46,569	Mathews, Rodney H	Painesville, Ohio	Beds, invalid	Feb. 28, 1865.
46,057	Mathieu, Jules O	France	Cords, rope, &c., machine for making. (Patented in France February 12, 1863.)	Jan. 24, 1865.
48,420	Matsinger, Maurice H	Philadelphia, Pa.	Bracket	June 27, 1865.
48,294	Matteson Elisha	South Brooklyn, N. Y	Movement, mechanical	June 20, 1865.
51,335	Matteson, Elisha	South Brooklyn, N. Y	Engines, rotary	Dec. 5, 1865.
50,943	Matteson, Silas C	Osceola, Wis	Movement, mechanical	Nov. 14, 1865.
50,373	Matthewman, George	Williamsburg, N. Y	Glass, tool for manufacture of	Oct. 10, 1865.
50,374	Matthewman, George	Williamsburg, N. Y	Glass buttons holding shanks for moulds of	Oct. 10, 1865.
48,082	Matthewman, George, and Anthony Leininger	Brooklyn, N. Y	Button making, moulds for	June 6, 1865.
48,421	Matthews, John, jr.	New York, N. Y	Faucets	June 27, 1865.
48,422	Matthews, John, jr	New York, N. Y	Bottles, instruments for opening	June 27, 1865.
48,822	Matthews, John, jr	New York, N. Y	Bottles, method of closing	July 18, 1865.
49,538	Matthews, John, jr	New York, N. Y	Bottles, machine for washing	Aug. 22, 1865.
50,255	Matthews, John, jr	New York, N. Y	Soda-water apparatus	Oct. 3, 1865.
50,832	Matthews, John, jr	New York, N. Y	Bottles, apparatus for filling	Nov. 7, 1865.
2,166	Matthews, John, jr	New York, N. Y	Valve handle (Design)	Sept. 12, 1865.
50,145	Mattoon, A. B	Niles, N. Y	Wagon brakes	Sept. 26, 1865.
	Matussiere, P. A. H., *et al.* (*See* Orioli, Fredet & Matussiere.)			
	Maurer, H., and A. Weber. (*See* Oest, Theodore L., assignor.)			
49,426	Maurer, William	Buffalo, N. Y	Windows	Aug. 15, 1865.
	Maxwell, Arthur. (*See* Merrill, Ira, *et al.*) Reissue.			
	Maxwell, E. H., *et al.* (*See* Hickey, Michael, assignor.)			
	Maxwell, J. B., *et al.* (*See* Gilbert, George W., assignor.)			
46,570	Maxwell, Leonard	Mitchel, Ind	Burns and scalds, method of curing	Feb. 28, 1865.
50,256	May, Franklin J	New York, N. Y	Pan, milk	Oct. 3, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
50,608	May, Henry	Bridgeport, Conn	Embossing wood, mode of	Oct. 24, 1865.
50,944	May, H. H	Galesburg, Ill	Water elevators	Nov. 14, 1865.
48,823	May, John M	Janesville, Wis	Drill, rock	July 18, 1865.
49,129	May, John M	Janesville, Wis	Drill	Aug. 1, 1865.
49,286	May, John M	Janesville, Wis	Gates	Aug. 8, 1865.
50,020	May, John M	Janesville, Wis	Drills, rock	Sept. 19, 1865.
48,701	May, John M., and Edwin B. Godfrey	Oshkosh, Wis	Fence, portable	July 11, 1865.
45,728	Maycock, Henry	Verona, N. Y	Stanchions, cattle	Jan. 3, 1865.
48,295	Mayer, John	Philadelphia, Pa	Brushes, hair	June 20, 1865.
49,539	Mayer, John	Philadelphia, Pa	Fountain and seats, rotating, for barbers' shops, combined	Aug. 22, 1865.
46,374	Mayer, John M	New York, N. Y	Grain, machine for hulling and cleaning	Feb. 14, 1865.
49,776	Mayher, John	East Hampton, Mass	Oil cans	Sept. 5, 1865.
	Mayhew, Jonathan, and Thomas S. Ray. (*See* Stuber & Frank, assignors.) Reissue.			
46,008	Mayhew, T	Poughkeepsie, N. Y	Photographic card mount	Jan. 24, 1865.
51,336	Mayhew, Theophilus	New York, N. Y	Drills, rock	Dec. 5, 1865.
48,194	Mayland, George	Brooklyn, N. Y	Fruit knife and nut pick	June 13, 1865.
47,843	Maynard, Edward	Washington, D. C	Buttons	May 23, 1865.
48,423	Maynard, Edward	Washington, D. C	Fire-arms, breech-loading	June 27, 1865.
49,966	Maynard, Edward	Washington, D. C	Cartridge retractor, for breech-loading fire-arms	July 25, 1865.
49,130	Maynard, Edward	Washington, D. C	Fire-arms, breech-loading	Aug. 1, 1865.
50,833	Mayo, John K	Portland, Me	Board, scale, and match splints, machines for cutting	Nov. 7, 1865.
51,735	Mayo, John K	Portland, Me	Material for roofing, tubing, tanks, wainscoting, boat and other structures.	Dec. 26, 1865.
49,921	Mayor, Thomas	Pawtucket, R. I	Roving frames, flyers for	Mar. 21, 1865.
46,530	Mayor, Thomas, assignor to George Chatterton	Pawtucket, R. I	Roving frames	Feb. 21, 1865.
1,950	Mayor, Thomas, assignor to George Chatterton	Pawtucket, R. I	Roving frames (Reissue)	May 9, 1865.
	McAdams, John	Brooklyn, N. Y	Books, account, machines for numbering the pages of. (Extension.)	Aug. 11, 1865.
51,068	McAfee, Daniel	Pittsburg, Pa	Glass pots	Nov. 21, 1865.
48,702	McArthur, William	Philadelphia, Pa	Feather renovator	July 11, 1865.
46,302	McAvoy, Hugh L., assignor to self and Elias S. Hutchinson	Baltimore, Md	Air, apparatus for carburetting	Feb. 7, 1865.
50,075	McAvoy, Hugh L., assignor to self and Elias S. Hutchinson	Baltimore, Md	Burners, gas	Sept. 19, 1865.
50,076	McAvoy, Hugh L., assignor to self and Elias S. Hutchinson	Baltimore, Md	Air, apparatus for carburetting	Sept. 19, 1865.
2,069	McAvoy, Hugh L., assignor to self and Elias S. Hutchinson	Baltimore, Md	Air, apparatus for carburetting (Reissue)	Sept. 5, 1865.
51,204	McCambridge, Samuel	Philadelphia, Pa	Car brakes	Nov. 28, 1865.
51,069	McCarthy, William C	Pittsburg, Pa	Measuring liquids in casks, instruments for. (Antedated May 21, 1865.)	Nov. 21, 1865.
49,640	McCauley, Reuben A	Baltimore, Md	Pumps	Aug. 29, 1865.
51,736	McCauley, Reuben A	Baltimore, Md	Pumps	Dec. 26, 1865.
	McClary, Andrew J., and Orin Kenison. (*See* Kenison & McClary.)			
49,477	McClave, Wm., assignor to Wm. P. Connell & Wm. M. Silkman	Hyde Park, Pa	Lamps, miners'	Aug. 15, 1865.
46,571	McClelland, John	Washington, D. C	Valves, stop	Feb. 28, 1865.
46,572	McClelland, John	Washington, D. C	Street washers	Feb. 28, 1865.
	McClelland, J., and R. Thayer. (*See* Thayer & McClelland.)			

50,304	McClintock, William, assignor to self and G. G. Lobdell	Wilmington, Del	Valve gear, cut-off	Oct. 3, 1865.
48,345	McCloskey, John, assignor to self and Samuel B. Ballou	New York, N. Y	Sewing machines	June 20, 1865.
50,422	McCloskey, John, assignor to Henry McGuekin	New York, N. Y	Heating apparatus, water	Oct. 10, 1865.
49,287	McConnell, Robert	Jacksonville, Ill	Tool for fastening tubes in boilers	Aug. 8, 1865.
50,834	McConnell, Robert	Lawrenceville, Pa	Nails, instruments for extracting	Nov. 7, 1865.
50,257	McCorkell, Robert	Philadelphia, Pa	Cultivators	Oct. 3, 1865.
49,131	McCracken, Edwin D	New York, N. Y	Fabrics, felted, manufacture of	Aug. 1, 1865.
47,440	McCrone, Alexander F	Ellicott's Mills, Md	Car brakes, railroad	Apr. 25, 1865.
48,703	McCrum, James	Locust Grove, Ohio	Gauges, carpenters'	July 11, 1865.
46,810	McCurdy, David	Ottawa, Ohio	Churn dashers	Mar. 14, 1865.
49,904	McCurdy, James S	Bridgeport, Conn	Sewing machine shuttles	Sept. 12, 1865.
50,021	McCurdy, James S	Bridgeport, Conn	Screw-drivers	Sept. 19, 1865.
46,303	McCurdy, James S., assignor to Elias Howe, jr	Bridgeport, Conn	Sewing machine	Feb. 7, 1865.
48,704	McDill, Thomas W	Perry, Ill	Stalks, corn, on the ground, device for cutting	July 11, 1865.
48,574	McDonald, Angus	Mattawan, Mich	Propeller, endless chain	July 4, 1865.
47,067	McDonald, A. G., assignor to self and John Morrison	Dubuque, Iowa	Wrench	Mar. 28, 1865.
	McDonald, Charles D. (*See* Emerson, James, assignor.)			
50,483	McDonald, Hugh	Pittsburg, Pa	Furnace, puddling, fixing for	Oct. 18, 1865.
45,729	McDougall, S. T	New York, N. Y	Gases, apparatus for carburetting	Jan. 3, 1865.
	McDowell, Robert. (*See* La Bar, Jesse, assignor.)			
49,641	McDowell, W. M., and Charles E. Bacchtel	Hagerstown, Md	Mills, cider	Aug. 29, 1865.
50,146	McEachren, Benjamin	San Francisco, Cal	Enamelling mouldings, apparatus for	Sept. 26, 1865.
49,540	McEwen, Ezra, assignor to self and Henry R. Fowler	Lisbon, Ill	Cultivator	Aug. 22, 1865.
	McFarland, Archibald. (*See* Wassell, Edwin, assignor.)			
45,928	McFarland, Edward F	Worcester, Mass	Forging apparatus	Jan. 17, 1865.
51,737	McFarland, Edward F. and John	Worcester, Mass	Spring and weight piston engines and stamping machine	Dec. 26, 1865.
47,029	McGaffey, Ives W	Chicago, Ill	Planter and cultivator, combined	Mar. 28, 1865.
46,481	McGill, William C	Cincinnati, Ohio	Fastener, sash	Feb. 21, 1865.
46,811	McGill, William C	Cincinnati, Ohio	Windlass	Mar. 14, 1865.
47,315	McGill, William C	Cincinnati, Ohio	Movement, mechanical	Apr. 18, 1865.
47,969	McGill, William C	Cincinnati, Ohio	Hoisting and lowering weights	May 30, 1865.
49,541	McGill, William C	Cincinnati, Ohio	Supporter, sash	Aug. 22, 1865.
49,905	McGill, William C	Cincinnati, Ohio	Movement, mechanical	Sept. 12, 1865.
51,470	McGill, William C	Cincinnati, Ohio	File holder	Dec. 12, 1865.
51,604	McGill, William C	Cincinnati Ohio	Hinge	Dec. 19, 1865.
45,844	McGillivrae, James A	Dyer, Ind	Presses	Jan. 10, 1865.
46,193	McGinnis, Barney, assignor to self and Reuben S. Torrey	New York, N. Y	Steam generators	Jan. 31, 1865.
	McGinnis, James, and Thomas Wiles. (*See* Wiles & McGinnis.)			
48,296	McGirr, Thomas, assignor to self and N. R. Nixon	Richmond, Ind	Faucets, measuring	June 20, 1865.
48,297	McGonnigle, M	Alleghany, Pa	Bolts, door	June 20, 1865.
47,654	McGrath, Robert	Philadelphia, Pa	Fluid ejectors	May 16, 1865.
	McGuekin, Henry. (*See* McCloskey, John, assignor.)			
49,132	McIlroy, Thomas	New York, N. Y	Surgeons' operating tables	Aug. 1, 1865.
50,258	McIlvain, William	Philadelphia, Pa	Grates for stoves	Oct. 3, 1865.
51,471	McInroy, Donald	New York, N. Y	Cords, braids, &c., machine for starching and glazing	Dec. 12, 1865.
46,375	McIntire, A. S., and Nathaniel S. Thompson	Stoneham, Mass	Lasting machines, toe pieces for	Feb. 14, 1865.
49,427	McIntire, John S	Chicago, Ill	Buildings, apparatus for removing	Aug. 15, 1865.
50,375	McIntire, John S	Chicago, Ill	Buildings, apparatus for removing	Oct. 10, 1865.
	McIntosh, James P., and William B. Burtnett. (*See* Burtnett & McIntosh.)			
	McIntosh, James P., and William B. Burtnett. (*See* Burtnett & McIntosh.)			

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	McIntosh, James P., and William B. Burtnett. (*See* Burtnett & McIntosh.)			
	McKay, Donald. (*See* Lay, John L., assignor.)			
	McKay, Donald. (*See* Wood & Lay, assignors.)			
	McKay, Donald. (*See* Wood & Lay, assignors.)			
	McKay, Donald. (*See* Wood & Lay, assignors.)			
	McKay, Donald. (*See* Wood & Lay, assignors.)			
48,238	McKay, Gordon, assignor to James Purinton, jr	Boston, Mass	Soles, channelled	June 13, 1865.
47,770	McKay, Gordon, and Lyman R. Blake, assignors to Gordon McKay	Boston, Mass Quincy, Mass	Shoe, turned	May 16, 1865.
46,688	McKean, H. T., assignor to self and William H. Reel	Allegheny, Pa	Dough, trough for raising	Mar. 7, 1865.
	McKenzie, J. U. (*See* Stoliker, Joseph, assignor.)			
47,441	McKenzie, William V	Jersey City, N. J	Presses, oil	Apr. 25, 1865.
45,929	McKesson, Elijah	Phillips' Mills, Pa	Plough, side hill	Jan. 17, 1865.
48,967	McKinney, E	Middletown, Pa	Burning petroleum, apparatus for	July 25, 1865.
45,930	McKnight, John	Philadelphia, Pa	Stoves, cooking, detachable flat-top and elevated	Jan. 17, 1865.
	McKnight, J. T. (*See* Hickey, Michael, assignor.)			
	McLain, James. (*See* Brown & Lowry, assignor.)			
2,095	McLaughlin, James W	Cincinnati, Ohio	Monument (Design)	June 13, 1865.
47,316	McLean, James W	Brooklyn, N. Y	Gun cotton and lint, manufacture of	Apr. 18, 1865.
50,147	McLean, James W	Brooklyn, N. Y	Pads, ventilating	Sept. 26, 1865.
49,478	McMahel, John, assignor to self and Abner Cory	Hamilton, Ohio	Straw cutters	Aug. 15, 1865.
51,205	McMaster, David	Bath, N Y	Ladders, fruit	Nov. 28, 1865.
	McMasters, L. J., *et al.* (*See* Hubbard, Orange B., assignor.)			
47,028	McMurray, Robert, and James S. Topham	Washington, D. C	Saddle valise	Mar. 28, 1865.
	McMurtry, John, and John A. Roebling. (*See* Roebling & McMurtry.)			
45,730	McNab, Daniel	Moscow, Mich	Cultivators	Jan. 3, 1865.
49,428	McNee, J. F	Philadelphia, Pa	Desk, folding	Aug. 15, 1865.
50,724	McNiel, John A	Grand Rapids, Mich	Meat pounder and potato masher	Oct. 31, 1865.
47,844	McNulty, B. H., and William Keen	Mansfield, Ohio	Tanning, process for	May 23, 1865.
	McNutt, John J. (*See* Locke, Harvey, assignor.)			
51,738	McPherson, James	Rockford, Ill	Horseshoes	Dec. 26, 1865.
46,012	McPherson, James A	Troy, N. Y	Ballot boxes	Jan. 24, 1865.
	McWilliams, James H. (*See* Brown, Daniel T., assignor.)			July 4, 1865.
48,576	Mecay, Samuel P	Kilborn, Ohio	Washing machine	
2,006	Meacham, George A., assignor through mesne assignments to Charles Smart.	New York, N. Y	Buttons (Reissue)	June 20, 1865.
45,731	Mead, Beverly E	Peekskill, N. Y	Game	Jan. 3, 1865.
50,660	Mead, Daniel C., and Charles Maggi, assignors to Charles Maggi	Pittsburg, Pa	Steam generators, low-water detectors for	Oct. 24, 1865.
48,968	Mead, H. A	Cuba, N. Y	Carpet stretcher	July 25, 1865.
48,575	Mead, H. S	Gloversville, N. Y	Cultivator	July 4, 1865.
45,931	Meader, George	Ottawa, Ill	Wrenches	Jan. 17, 1865.
	Mears, L. R., and Edwin Thompson. (*See* Thompson & Mears.)			
49,642	Mears, William R	Grafton, Ill	Spading machines	Aug. 29, 1865.

50,259	Mears, William R	Grafton, Ill	Roller and harrow combined	Oct. 3, 1865.
45,845	Meech, Harrison B	Fort Edward, N. Y	Paper pulp, rotary boilers for the manufacture of	Jan. 10, 1865.
50,835	Meech, Harrison B	Fort Edward, N. Y	Paper pulp, treating straw for	Nov. 7, 1865.
47,771	Meeker, George H., assignor to Lacy, Meeker & Co	Bridgeport, Conn	Saddles, riding	May 16, 1865.
47,317	Mefford, David M	Cincinnati, Ohio	Cartridges for small-arms	Apr. 18, 1865.
48,424	Melcher, Josiah F	Bloomington, Ill	Washing machine	June 27, 1865.
	Melick, James H., and John A. Burnap. (*See* Burnap & Melick.)			
50,148	Melot, Amos, and Jeremiah T. Fry	Reading, Pa	Car coupling	Sept. 26, 1865.
51,605	Meloy, David H	Waterbury, Conn	Can for tea, sugar, &c	Dec. 19, 1865.
49,643	Mendenhall, S. C	Richmond, Ind	Bobbins in shuttles, mode of fastening	Aug. 29, 1865.
49,644	Mendenhall, S. C	Richmond, Ind	Looms	Aug. 29, 1865.
49,645	Mennel, Anton	New York, N. Y	Legs, artificial	Aug. 29, 1865.
	Meriele, L. H., and G. D. Pettingill. (*See* Pettingill & Meriele.)			
	Meriden Cutlery Company. (*See* Fosket, William, assignor.)			
	Merighi, C., *et al.* (*See* Skinner, Duncan & Merighi.)			
	Merrell, G. W. (*See* Clos, W. R., assignor.)			
48,577	Merriam, Truman, and James Cushing	Waterloo Village, Wis	Engines, rotary	July 4, 1865.
49,906	Merrick, Cyrus Henry	Pittsburg, Pa	Nails, machine for making	Sept. 12, 1865.
	Merriel, W. M., and Jonathan S. Tibbets. (*See* Tibbets & Merriel.)			
	Merrill, Charles, and Sons. (*See* Raymond, Edwin A., assignor.)			
46,010	Merrill, George C	Chicago, Ill	Lanterns. (Antedated January 14, 1865)	Jan. 24, 1865.
2,059	Merrill, Hiram T., and John H. Boennan	Chicago, Ill	Stool, piano (Design)	May 9, 1865.
2,129	Merrill, Ira, assignor to Arthur Maxwell	Shelburne Falls, Mass	Tunnelling and quarrying, machine for (Reissue)	Dec. 19, 1865.
47,970	Merrill, J. H	Quasqueton, Iowa	Sorghum evaporator	May 30, 1865.
49,542	Merrill, Jason H	Norwalk, Conn	Match igniter	Aug. 22, 1865.
50,725	Merrill, Rufus M	Chicago, Ill	Lanterns	Oct. 31, 1865.
48,824	Merrill, Rufus S	Boston, Mass	Lamp burners	July 18, 1865.
49,133	Merriman, John A	Chicago, Ill	Screws, machine for cutting	Aug. 1, 1865.
45,846	Merrymon, John M	Indianapolis, Ind	Prussian blue, manufacture of	Jan. 10, 1865.
49,134	Merrymon, John M., and Kilby Ferguson	Indianapolis, Ind	Window sash, mode of hoisting and lowering	Aug. 1, 1865.
47,117	Mersereau, W. T	Newark, N. J	Casters, furniture	Apr. 4, 1865.
48,825	Mersereau, W. T	Newark, N. J	Stair rod	July 18, 1865.
49,288	Meservey, Henry L	Boston, Mass	Washing roller	Aug. 8, 1865.
51,657	Meservey, H. L., assignor, through mesne assignments, to Howard Tilden.	Boston, Mass	Sifter, flour	Dec. 19, 1865.
	Messenger, V. A. and V. J. (*See* Richards, C. E., assignor.)			
46,689	Messer, Henry	Roxbury, Mass	Air engines, hot	Mar. 7, 1865.
	Messer, M. H. (*See* Gray, D. S., assignor.)			
49,429	Messinger, Charles T. and James B	Logansport, Ind	Screen, grain. (Antedated August 11, 1865)	Aug. 15, 1865.
45,732	Metcalf, David H., and Henry J. Shoemaker	Battle Creek, Mich	Stove-pipes	Jan. 3, 1865.
	Metropolitan Collar Company. (*See* Fairman, Henry B., assignor.)			
	Metropolitan Washing Machine Co. (*See* Pease, Jas. N., assignor.)			
	Metropolitan Washing Machine Co. (*See* Couch, John O., assignor.)			
	Metropolitan Washing Machine Co. (*See* Couch, John O., assignor.)			
47,120	Mets, John D	Dubuque, Iowa	Albums, construction of	Apr. 4, 1865.
46,529	Metzler, Henry F., assignor to self and Thomas G. Cowperthwaite	New York, N. Y	Hor-e, spring	Feb. 21, 1865.
46,607	Mencei, Antonio, assignor to William E. Rider	Richmond, N. Y	Wicks, mode of making	Feb. 28, 1865.
47,068	Mencei, Antonio, assignor to William E. Rider	Clifton, N. Y	Process for removing mineral, gummy, and resinous substances from vegetable fibre.	Mar. 28, 1865.
49,351	Meyer, Frederick C., assignor to Ernestine Meyer	Philadelphia, Pa	Pitcher, ice	Aug. 8, 1865.
50,260	Meyer, Movius J	Washington, D. C	Latch and bolt combined	Oct. 3, 1865.
50,212	Mignon, J., and S. H. Ronart	France	Freezing liquids, apparatus for	Sept. 26, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
48,772	Mihan, Patrick, assignor to Oliver P. Drake	Boston, Mass	Air, apparatus for carburetting	July 11, 1865.
46,125	Milbank, Isaac M	Greenfield Hill, Conn	Fire-arms, breech-loading	Jan. 31, 1865.
48,873	Milburn, Benjamin T., assignor to self and Joseph Rigby	Wilmington, Del	Railway chairs	July 18, 1865.
	Miles, C. M., and J. S. Hoard. (*See* Hoard and Miles.)			
46,304	Miles, Nathaniel, assignor to Bay State Hardware Company	Buckland, Mass	Cutlery, table	Feb. 7, 1865.
49,289	Miles, O. E	Aurora, Ill	Vehicles. (Antedated August 7, 1865)	Aug. 8, 1865.
50,149	Miles, Purches	New York, N. Y	Curtain fixtures	Sept. 26, 1865.
50,022	Millar, Henry W	Utica, N. Y	Cans, construction of	Sept. 19, 1865.
49,596	Mille, M. J. A., assignor to H. A. G. Du Vergier	France	Air, apparatus for carburetting	Aug. 22, 1865.
	Millen, W. H., and Mathias J. Rice. (*See* Rice & Millen.)			
	Millen, W. H., and Mathias J. Rice. (*See* Rice & Millen.)			
	Miller, August, and Fitch Raymond. (*See* Raymond & Miller.)			
	Miller, August, and Fitch Raymond. (*See* Raymond & Miller.)			
	Miller, August, and Fitch Raymond. (*See* Raymond & Miller.)			
48,195	Miller, Charles E	Cincinnati, Ohio	Broom head	June 13, 1865.
51,658	Miller, Charles E., assignor to self and Frank Dial	Cincinnati, Ohio	Broom head	Dec. 19, 1865.
48,196	Miller, Charles T	Providence, R. I	Sifter, ash	June 13, 1865.
50,609	Miller, Edwin F., and Bela Gardner	Williamsburg, Hampshire county, Mass.	Belts together, machine for drawing	Oct. 24, 1865.
46,126	Miller, Ezra	Janesville, Wis	Car coupler and buffer	Jan. 31, 1865.
45,932	Miller, George	Washington, D. C	Gauges, carpenters'	Jan. 17, 1865.
50,484	Miller, George	Washington, D. C	Gauges, carpenters'	Oct. 18, 1865.
	Miller, George W., and Albert Watson. (*See* Watson & Miller.)			
45,847	Miller, Henry J	Shanesville, Ohio	Sawing machines	Jan. 10, 1865.
47,170	Miller, Ivon B. and William H	Philadelphia, Pa	Lubricating the packing of stuffing boxes, &c	Apr. 4, 1865.
47,119	Miller, Ivon B. and William H	Philadelphia, Pa	Pistons, &c., manufacture of packing for	Apr. 4, 1865.
48,425	Miller, James	St. Louis, Mo	Grates	June 27, 1865.
47,442	Miller, John	Buffalo, N. Y	Faucet, beer	Apr. 25, 1865.
50,213	Miller, John	Russellville, Ky	Planters, seed	Sept. 26, 1865.
46,259	Miller, John A	Paducah, Ky	Ordnance, breech-loading	Feb. 7, 1865.
50,610	Miller, John A	Somerville, Ohio	Broom-head	Oct. 24, 1865.
46,127	Miller, Joseph A	New York, N. Y	Grate bars for furnaces, casting	Jan. 31, 1865.
47,118	Miller, Joseph A	New York, N. Y	Furnace, boiler	Apr. 4, 1865.
47,443	Miller, Joseph A	New York, N. Y	Furnace, hot air	Apr. 25, 1865.
50,611	Miller, Joseph A	New York, N. Y	Boilers, cast-iron	Oct. 24, 1865.
	Miller, Joseph R., and Joseph W. Wayne. (*See* Wayne & Miller.)			
51,070	Miller, Lewis	Akron, Ohio	Harvesters, rake attachments to	Nov. 21, 1865.
51,071	Miller, Lewis	Akron, Ohio	Harvesters, rake attachments to	Nov. 21, 1865.
46,922	Miller, Rutger B	Utica, N. Y	Fibres of epilobium, manufacture from	Mar. 21, 1865.
48,578	Miller, Samuel J., Albert B. Barnett, and William H. Study	Economy, Ind	Hides, apparatus for lining	July 4, 1865.
46,128	Miller, Thomas	Columbus, Ohio	Canal scraper	Jan. 31, 1865.
2,003	Miller, William	Cincinnati, Ohio	Hoisting machine (Reissue)	June 20, 1865.
2,065	Miller, William	Cincinnati, Ohio	Hoisting machine (Reissue)	Sept. 5, 1865.
2,066	Miller, William	Cincinnati, Ohio	Hoisting machine (Reissue)	Sept. 5, 1865.
48,579	Miller, William	Cincinnati, Ohio	Hoisting machine	July 4, 1865.

	Miller, William. (*See* Simmons, Franklin, assignor.) Design.			
	Miller, William. (*See* Simmons, Franklin, assignor.) Design.			
	Miller, William. (*See* Simmons, Franklin, assignor.) Design.			
	Miller, William. (*See* Simmons, Franklin, assignor.) Design.			
	Miller, William. (*See* Simmons, Franklin, assignor.) Design.			
	Miller, William. (*See* Simmons, Franklin, assignor.) Design.			
	Milier, William. (*See* Simmons, Franklin, assignor.) Design.			
	Miller, William. (*See* Simmons, Franklin, assignor.) Design.			
51,739	Miller, William H. and G. W	West Meriden, Conn	Fire-arms, breech-loading	Dec. 26, 1865.
47,902	Miller, William H. and G. W., assignors to Edmund Parker	Meriden, Conn	Fire-arms, breech-loading	May 23, 1865.
	Miller, William J. (*See* Hunt, Zebulon, assignor.)			
	Miller, William S. (*See* Flinn, Darwin P., assignor.)			
47,069	Millet, John W., assignor to J. A. Sumner	Albany, N. Y	Boxes, paper, construction of	Mar. 28, 1865.
47,602	Millet, John W., assignor to B. R. Jenkins and C. Sumner	Albany, N. Y	Baskets, machinery for forming	May 2, 1865.
49,907	Millhauser, Anselm	New York, N. Y	Table for the sick	Sept. 12, 1865.
	Milliken, Geo. F., and Moses G. Farmer. (*See* Farmer & Milliken.)			
	Milne. William B. (*See* Kunkel, Frank, assignor.)			
46,923	Millochau, Adolph	New York, N. Y	Petroleum, &c., apparatus for distilling	Mar. 21, 1865.
49,777	Millochau, Adolph	New York, N. Y	Petroleum, instrument for testing	Sept. 5, 1865.
50,878	Mills, C. A., assignor to the Ureka Manufacturing Company	Bristol, Conn	Coffee roaster	Nov. 7, 1865.
47,121	Mills, Clark	Washington, D. C	Casts from the face of living persons, mode of taking	Apr. 4, 1865.
	Mills, Clark W. (*See* Chichester, Lewis S., assignor.)			
	Mills, Clark W. (*See* Chichester, Lewis S., assignor.)			
	Mills, C. W., *et al.* (*See* Taggart, Chichester & Mills.)			
2,082	Mills, Fisk	Washington, D. C	Lincoln, Abraham, bust of (Design)	June 6, 1865.
47,444	Mills, George E	New York, N. Y	Oil ejectors	Apr. 25, 1865.
48,826	Mills, George E	New York, N. Y	Pumps	July 18, 1865.
49,778	Mills, George E	New York, N. Y	Well, oil, tubes, packing for	Sept. 5, 1865.
	Mills, Jared W. (*See* Robeson, Robert J., assignor.)			
47,655	Mills, Joseph	Reading, Ill	Cultivators	May 9, 1865.
48,969	Mills, Samuel	Bergen, N. J	Engines, steam, governor valves for	July 25, 1865.
	Mills, William M., *et al.* (*See* Roberts, E., assignor.) Reissue.			
47,030	Milsom, George, Henry Spendelow, and G. V. Watson	Buffalo, N. Y	Vessel's hold, apparatus for levelling grain in a	Mar. 28, 1865.
49,290	Miltimore, J. H	Milwaukie, Wis	Lanterns	Aug. 8, 1865.
50,150	Minick, William	Kansas, Ill	Derrick, hay	Sept. 26, 1865.
46,376	Minnich, Elias	McKee's Half Falls, Pa	Cultivator	Feb. 14, 1865.
46,377	Minniss, Thomas S	Meadville, Pa	Gates, mode of hanging	Feb. 14, 1865.
46,011	Minor, John A	Middletown, Conn	Lantern, pocket	Jan. 24, 1865.
50,261	Minor, John A	Middletown, Conn	Umbrella holders	Oct. 3, 1865.
2,093	Minter, James, assignor to self, J. Hope, and R. H. Butcher	Worcester, Mass	Bolt-heading machines (Reissue)	Oct. 17, 1865.
50,836	Minthorn, Daniel	New York, N. Y	Furnace, isomeric diaphragm, for desulphurizing ores	Nov. 7, 1865.
	Mitchell, George E. (*See* Armington, William W., assignor.)			
	Mitchell, George E. (*See* Armington, William W., assignor.)			
	Mitchell, George E. (*See* Welch & Armington, assignors.)			
46,573	Mitchell, G. W	St. Louis, Mo	Mattress, spring	Feb. 28, 1865.
46,690	Mitchell, Henry	Richmond, Ind	Measure, funnel, and faucet, combined	Mar. 7, 1865.
47,845	Mitchell, Henry	Richmond, Ind	Stoves, cook	May 23, 1865.
51,606	Mitchell, Lampson P	Waterbury, Conn	Buckles, machinery for making	Dec. 19, 1865.
	Mitchell, R. C. (*See* William Mont. Storm, assignor.)			
	Mitchell, R. C. (*See* William Mont. Storm, assignor.)			
46,378	Mitchell, Samuel H	El Paso, Ill	Plough, gang, and cultivator	Feb. 14, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,846	Mitchell, S. J	St. Louis, Mo	Lightning rods	May 23, 1865.
	Mitchell, Thomas D., *et al.* (*See* Billings, Jasper, assignor.)			
51,206	Moeller, Jacob E	Terre Haute, Ind	Evaporator	Nov. 28, 1865.
	Moen, P. L., and J. Washburn. (*See* Chesney & Brown, ass'rs.) Reissue.			
	Moen, P. L., and J. Washburn. (*See* Frost, W. E., assignor.)			
	Moen, P. L., and J. Washburn. (*See* Frost, W. E., assignor.)			
	Moen, P. L., and J. Washburn. (*See* Frost, W. E., assignor.)			
	Moeser, Henry	Pittsburg, Pa	Printing names of subscribers upon newspapers, &c. (Extension.)	June 14, 1865.
48,298	Moffett, Charles R	Philadelphia, Pa	Grubbing machines	June 20, 1865.
51,207	Moffitt, J. R	Chelsea, Mass	Rubber, apparatus for moulding	Nov. 28, 1865.
48,970	Moith, A. Theodore, assignor to Henry A. Alden	Fishkill Landing, N. Y	Sponge for stuffing, packing, &c., preparing	July 25, 1865.
47,213	Molinard, Albert J. S	Baltimore, Md	Projectiles for rifled ordnance, packing	Apr. 11, 1865.
47,243	Molyneux, James, assignor to the Bordentown Machine Company.	Bordentown, N. J	Pumps, air	Apr. 11, 1865.
	Molyneux, James, and William A. Wright. (*See* Wright & Molyneux.)			
46,924	Monnier, Alfred	Philadelphia, Pa	Oxides, metallic, process for purifying	Mar. 21, 1865.
51,740	Monroe, George O	New York, N. Y	Buckle	Dec. 26, 1865.
49,038	Monroe, Joseph, assignor to self and J. Gardiner	New York, N. Y	Legs, artificial	July 25, 1865.
51,607	Monroe, Robert, E. Stone, and Edgar St. John	Elmira, N. Y	Cars, railroad, ventilating window for	Dec. 19, 1865.
49,135	Monsees, John H	Smith City, Mo	Washing machine	Aug. 1, 1865.
50,151	Monson, Charles	New Haven, Conn	Pressure and gravitation machines	Sept. 26, 1865.
50,262	Monson, Charles	New Haven, Conn	Hammer	Oct. 3, 1865.
50,263	Monson, Charles	New Haven, Conn	Blasting plug	Oct. 3, 1865.
2,098	Montgomery, H., and S. Howes, assignors to E. H. and M. E. Montgomery.	Silver Creek, N. Y	Separators, grain (Reissue)	Oct. 31, 1865.
	Montgomery, James H., and William A. Dryden. (*See* Dryden & Montgomery.)			
47,772	Montgomery, Joseph and James, and Evan Davis	Baltimore, Md	Separator, grain	May 16, 1865.
46,482	Montgomery, Richard	New York, N. Y	Railroads	Feb. 21, 1865.
46,574	Montignani, John O	Albany, N. Y	Hammer, carpenters'	Feb. 28, 1865.
49,779	Montignani, John O	Albany, N. Y	Clothes-rack	Oct. 31, 1865.
	Mooberry, D., *et al.* (*See* Pratt, Ira C., assignor.)			
50,376	Mood, Robert	Indianapolis, Ind	Steam-generators, safety valve for	Oct. 10, 1865.
47,318	Moody, C. Mason	Greenfield, Mass	Brushes, dusting	Apr. 18, 1865.
45,733	Moody, Loring	Malden, Mass	Car coupling	Jan. 3, 1865.
50,152	Moody, Loring	Malden, Mass	Car coupling	Sept. 26, 1865.
51,608	Moody, Loring	Malden, Mass	Car coupling	Dec. 19, 1865.
1,872	Moody, Sarah A	New York, N. Y	Skirts, hoop (Reissue)	Feb. 14, 1865.
	Moon, John B., and Roswell Denison. (*See* Denison & Moon.)			
47,971	Mooney, Gilbert V	New York, N. Y	Barometers	May 30, 1865.
46,691	Moore, Albert, and James A. Cole	Northville, N. Y	Lamps, mode of suspending burners for	Mar. 7, 1865.
	Moore, A. S., *et al.* (*See* Burrill, J, assignor.) Reissue.			
46,484	Moore, A. W	Stafford, Conn	Boots, &c., jack for pegging. (Antedated February 12, 1865)	Feb. 21, 1865.
49,291	Moore, Charles A	Westbrook, Conn	Scrubbing knuckle shield	Aug. 8, 1865.

51,337	Moore, Charles C	New York, N. Y	Blotter	Dec. 5, 1865.
	Moore, C. H. (*See* Tucker, John E., assignor.)			
47,847	Moore, Frederick H	Boston, Mass	Boots, device for pulling on	May 23, 1865.
45,933	Moore, George Rodney	Lyons, Iowa	Fire-chamber clearer	Jan. 17, 1865.
51,338	Moore, H. W	Bridgeport, Conn	Car-wheels, device for annealing	Dec. 5, 1865.
2,211	Moore, John	Warren, Mass	Inks and (Design)	Oct. 31, 1865.
51,072	Moore, John G	Philadelphia, Pa	Orreries	Nov. 21, 1865.
47,031	Moore, John Robert	Brooklyn N. Y	Tools for drilling, coupling	Mar. 28, 1865.
48,827	Moore, S. A	Bloomfield, Iowa	Horseshoes	July 18, 1865.
47,848	Moore Samuel C	Boston, Mass	Matches, friction	May 23, 1865.
48,580	Moore, Thomas	Bloomington, Ill	Sugar, process for making	July 4, 1865.
50,077	Moore, Thomas, assignor to John Ellerby	Cornwall, Conn	Kaolin, apparatus for purifying	Sept. 19, 1865.
48,971	Moore, William H	Salem, Mass	Leather, machine for boarding	July 25, 1865.
	Moore's Patent Fire-arms Co. (*See* Williamson, David, assignor.)			
47,309	Moran, Richard W	St. Louis, Mo	Printing-presses	Apr. 18, 1865.
49,136	Morandi, Francis	Boston, Mass	Stoves, summer	Aug. 1, 1865.
48,972	More, E. A	St. Louis, Mo	Oil-cans, method of protecting corks of	July 25, 1865.
46,812	Morehead, Warren	Parkersburg, West Va	Ladder, extension	Mar. 14, 1865.
	Morehouse, Benjamin S. (*See* Harris, Horace, assignor.) Design.			
46,575	Morehouse, C. L	Cleveland, Ohio	Garments, under, for ladies, interlined	Feb. 28, 1865.
51,073	Morehouse, C. R	Cardington, Ohio	Churns	Nov. 21, 1865.
46,013	Morehouse, William	Buffalo, N. Y	Saw-frames, wood	Jan. 24, 1865.
47,032	Morehouse, William	Buffalo, N. Y	Saw-frames, buck	Mar. 28, 1865.
47,214	Morehouse, William	Buffalo, N. Y	Axe-helves	Apr. 11, 1865.
	Morgan, E. J., and A. H. Fowler. (*See* Fowler & Morgan.)			
45,734	Morgan, Jacob	Dundee, Ohio	Houses, portable, mode of constructing frames of	Jan. 3, 1865.
46,758	Morgan, J. C., assignor to Wm. A. Nixon and J. S. Everhard	Alliance, Ohio	Key seats, machine for cutting	Mar. 10, 1865.
	Morgan, James G., and Joel Webster. (*See* Webster & Morgan.)			
47,559	Morgan, John F	Boston, Mass	Box, lunch	May 2, 1865.
	Morgan, N. D. (*See* Jones, Abner W., assignor.)			
50,023	Morgan, William F., and F. C. Bartlett	New York, N. Y	Grate-bar supporters. (Antedated September 6, 1865)	Sept. 19, 1865.
48,133	Morgenstern, William, assignor to self and Wm. P. Wilstach	Philadelphia, Pa	Fire-arms, breech-loading	June 6, 1865.
46,855	Morgenthau, Lazarus	Baden	Cigars, cigarettes, &c., manufacture of	Mar. 14, 1865.
47,504	Morgenthau, Lazarus	Baden	Candy, medicated	Apr. 25, 1865.
48,083	Morlan, L. W	New Lisbon, Ohio	Bag-holder	June 6, 1865.
49,430	Morley, Isaac	Alleghany, Pa	Brick machine	Aug. 15, 1865.
50,612	Morris, Charles N	Cincinnati, Ohio	Printing. (Antedated April 24, 1865)	Oct. 24, 1865.
45,848	Morris, Edmund	Burlington, N. J	Fruit box	Jan. 10, 1865.
49,908	Morris, Edmund	Burlington, N. J	Fruit box	Sept. 12, 1865.
48,828	Morris, Evan	Philadelphia, Pa	Hats	July 18, 1865.
47,741	Morris, George M	Roxbury, Mass	Bolt catch, spring	May 16, 1865.
48,197	Morris, Jacob	Auburn, Mo	Planters, corn, hand	June 13, 1865.
48,198	Morris, James H. M	Reading, Ill	Liniment	June 13, 1865.
46,129	Morrison, Enoch R	New York, N. Y	Shingle machines	Jan. 31, 1865.
	Morrison, E. R., *et al.* (*See* Van Norman, Brown & Morrison.)			
46,483	Morrison, James, jr	Troy, N. Y	Stoves, coal	Feb. 21, 1865.
48,299	Morrison, James, jr	Troy, N. Y	Ash-pan drawer and lifter	June 20, 1865.
	Morrison, John. (*See* McDonald, A. G., assignor.)			
	Morse, Alfred. (*See* Fiske, Horatio, assignor.)			
	Morse, C. O., and Hiram Littlefield. (*See* Estes, Samuel, assignor.)			
47,154	Morse, Francis B., assignor to Frederick C. Dayton, jr	New Haven, Conn	Carriages, shaft-couplings for	Apr. 4, 1865.
46,692	Morse, G. Livingston, and L. M. Herrick	Harrison, N. J	Knife, fork, and spoon holder	Mar. 7, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residenee.	Invention or diseovery.	Date.
47,742	Morse, Herbert A	Canton, Mass	Tobaceo, machines for eutting	May 16, 1865.
46,260	Morse, Jonathan E	Boston, Mass	Saeeharine and other liquids, evaporator for	Feb. 7, 1865.
47,849	Morse, Oliver	Needham Lower Falls, Mass.	Paper-mill engines, bed-plate for	May 23, 1865.
48,703	Morse, Thomas N	Grattan, Mich	Presses, wool	July 11, 1865.
49,292	Morse, W. C	Boston, Mass	Car-eoupling	Aug. 8, 1865.
47,122	Morton, Albert	New Market, N. H	Engines, steam, valve for	Apr. 4, 1865.
47,215	Morton, C. P	Chester, Pa	Railroads, alarms for	Apr. 11, 1865.
45,735	Morton, E. H	Oxford, Iowa	Ploughs, ditching and mole	Jan. 3, 1865.
49,909	Morton, G. G., and E. Lamasure	Philadelphia, Pa	Shutters, deviee for closing and opening	Sept. 12, 1865.
47,123	Mosher, Omen E	New York, N. Y	Refrigerator	Apr. 4, 1865.
	Mosher, O. E., and Thomas S. Blake. (*See* Blake & Mosher.)			
50,613	Moss, Rees	Philadelphia, Pa.	Grate, stove, adjustable	Oet. 24, 1865.
	Mott, Charles A., *et al.* (*See* Brown, John E., assignor.)			
	Mott, George. (*See* Hall, Samuel Z., assignor.)			
50,024	Moulton, H. L	Camden, N. J	Spinning jaeks	Sept. 19, 1865.
50,377	Moulton, H. L	Camden, N. J	Carding engines	Oct. 10, 1865.
46,813	Moulton, Joel	Boston, Mass	Drilling machines	Mar. 14, 1865.
46,860	Moulton, Joel	Boston, Mass	Pumps in deep oil wells, elastie packing for the exterior of	Mar. 14, 1865.
47,850	Moulton, Joel	Boston, Mass	Drills, rock	May 23, 1865.
45,849	Mowbray, George M	Titusville, Pa	Wells, oil, ejectors for	Jan. 10, 1865.
46,485	Mowbray, George M	Titusville, Pa	Wells, oil, ejeetors for	Feb. 21, 1865.
46,925	Mowbray, George M	Titusville, Pa	Oil ejeetors	Mar. 21, 1865.
51,339	Mowry, Silas S., and Albert G. Bates	Providence, R. I	Spoke-shaves	Dec. 5, 1865.
51,659	Moxey, J. G., ass'r to self, Henry C. Carey, and Abraham Hart	Philadelphia, Pa	Bread, manufacture of	Dec. 19, 1865.
48,300	Moyer, E. D	Philadelphia, Pa	Bottle stopper	June 20, 1865.
46,014	Moyer, J. W	Cherry Valley, N. Y	Sofa	Jan. 24, 1865.
46,015	Moyer, J. W	Cherry Valley, N. Y	Sawing maehines	Jan. 24, 1865.
46,016	Moyer, J. W	Cherry Valley, N. Y	Coats with inner sleeves	Jan. 24, 1865.
46,576	Mozart, Don J	New York, N. Y	Timepieces, escapements for	Feb. 28, 1865.
46,577	Mozart, Don J	New York, N. Y	Cloeks, calendar	Feb. 28, 1865.
50,614	Mudge, Byron	Cortlandville, N. Y	Wells, mode of sinking	Oct. 24, 1865.
48,829	Mudge, George G	Pittsburg, Ind	Carpet stretcher	July 18, 1865.
47,445	Mudge, Jarvis T	Cleveland, Ohio	Washing maehine	Apr. 25, 1865.
2,191	Mueller, Augustus C., assignor to Heller & Teibroek	St. Louis, Mo	Trade mark (Design)	Oet. 10, 1865.
45,736	Muir, Joseph	New York, N. Y	Clay for potters' use, machine for eondensing pap or slops of	Jan. 3, 1865.
45,737	Muir, Joseph	New York, N. Y	Clay for potters' use, proeess of preparing	Jan. 3, 1865.
	Mulehahey, William. (*See* Ritterhoff & Colquitt, assignors.)			
	Mulehahey, William, *et al.* (*See* Ritterhoff, Colquitt & Mulehahey.)			
48,301	Mulhaupt, Gregory	Buffalo, N. Y	Drills, rock	June 20, 1865.
50,378	Müllear, George	San Francisco, Cal	Planes, bench	Oct. 10, 1865.
51,668	Muller, Burkhard, assignor to Schaek & Hotop	Tulda, Germany	Embroidery, imitation of,	Dee. 19, 1865.
50,945	Muller, John M	North Becket, Mass	Tanning	Nov. 14, 1865.
2,060	Muller, Nicholas	New York, N. Y	Clock front (Design)	May 9, 1865.
1,906	Mumma, Jacob H	Harrisburg, Pa	Straw eutter (Reissue)	Mar. 21, 1865.
51,074	Mumma, Jacob H	Harrisburg, Pa	Brooms, attachment for	Nov. 21, 1865.

1,899	Mumma, Jacob H., assignor through mesne assignments to H. K. Parsons.	Harrisburg, Pa	Straw cutter (Reissue)	Mar. 7, 1865.
47,972	Mund, Herman	Chicago, Ill	Hook, snap	May 30, 1865.
47,320	Munger, D. B	Mumford, N. Y	Harvesters, bean	Apr. 18, 1865.
50,485	Munger, George	New Haven, Conn	Paper lining, substitute for. (Antedated October 4, 1865)	Oct. 17, 1865.
50,486	Munger, George	New Haven, Conn	Fruit baskets. (Antedated October 13, 1865)	Oct. 17, 1865.
46,531	Munger, Lyman F., assignor to self and Walter K. Marvin	Rochester, N. Y	Locks	Feb. 21, 1865.
48,874	Munger, W. T., assignor to self and James Graham	Brantford, Conn	Door knobs, extension	July 18, 1865.
48,141	Munoz, Manuel J. Lopez y	Cuba	Cigarettes, machine for making	June 6, 1865.
48,199	Munroe, Francis S., and Thos. Mason	Grantville, Mass Boston, Mass	Printing paper hangings, machine for	June 13, 1865.
51,609	Munson, David	Indianapolis, Ind	Rulers, metallic	Dec. 19, 1865.
47,851	Munson, Ira F	Washington, D. C	Musical instrument	May 23, 1865.
49,543	Murdock, James, jr., and Wm. W. Spencer	Cincinnati, Ohio	Baggage checks	Aug. 22, 1865.
48,302	Murdock, John	South Carver, Mass	Furnace, kettle, portable	June 20, 1865.
51,340	Murdock, Wm	Winchendon, Mass	Spinning bobbins	Dec. 5, 1865.
50,206	Murphy, Griffith, assignor to self and Wm. D. Slack	Lewisburg, Pa	Harvesting machines	Sept. 26, 1865.
47,153	Murphy, Griffith M., assignor to Lyman S. Paine	Lewisburg, Pa	Drill, seed	Apr. 4, 1865.
	Murphy, John and William, and John H. Cox. (*See* Cox & Murphy.)			
47,780	Murphy, John D	Pottsville, Pa	Car wheels, railroad, manufacture of	May 16, 1865.
51,341	Murphy, T. W	New Egypt, N. J	Collars, horse, making	Dec. 5, 1865.
47,682	Murray, Edgar, assignor to Frederick Wuesthoff	New York, N. Y	Skates	May 9, 1865.
49,832	Murray, Edgar, assignor to Wm. J. Coombs	New York, N. Y	Skates	Sept. 5, 1865.
48,303	Murray, Francis G	Washington, D. C	Gunpowder, manufacture of	June 20, 1865.
51,342	Murray, George	Cambridge, Mass	Press for forming metal basing	Dec. 5, 1865.
48,084	Murray, John	New York, N. Y	Car springs	June 6, 1865.
	Murray, Michael and E. J., and John J. Johnson. (*See* Johnson & Murray.)			
51,472	Murray, Peter	Milwaukee, Wis	Grates	Dec. 12, 1865.
45,949	Murray, Robert, assignor to self and James W. Tufts	Boston, Mass	Faucets	Jan. 17, 1865.
	Murray, Robert, and L. D. Hoyt. (*See* Hoyt & Murray.)			
49,489	Mushet, Robert	England	Steel, &c., manufacture of	Aug. 15, 1865.
50,946	Myer, Albert J	Washington, D. C	Signals	Nov. 14, 1865.
49,431	Myer, Henry B	Cleveland, Ohio	Steam generator	Aug. 15, 1865.
46,379	Myers, H. B	Schoolcraft, Mich	Traps, animal, self-setting	Feb. 14, 1865.
	Myers, H. S., and M. Vedder. (*See* Blythe, John E., assignor.)			
47,321	Myers, Isaac	Pisgah, Ohio	Sugar, wine, and oil from sorghum, apparatus for manufacturing	Apr. 18, 1865.
46,132	Myers, Isaac, and Marshall D. Wellman	Pittsburg, Pa	Planter, cotton seed. (Antedated January 19, 1865)	Jan. 31, 1865.
	Myers, J. B., and J. L. Smith. (*See* Sichs, Reuben, assignor.)			
50,661	Myers, James, assignor to self and Samuel N. Lightner	Alleghany, Pa	Piston packing	Oct. 24, 1865.
50,025	Myers, James, jr	New York, N. Y	Sifter, flour	Sept. 19, 1865.
1,910	Myers, Lawrence	Philadelphia, Pa	Cars, railroad (Reissue)	Mar. 14, 1865.
	Myers, Lawrence	Philadelphia, Pa	Cars, railroad (Extension)	June 16, 1865.
48,830	Myers, Lawrence	Philadelphia, Pa	Cars, freight	July 18, 1865.
50,726	Myers, L. N	Wilmington, Ohio	Sorghum evaporator	Oct. 31, 1865.
46,814	Myers, M. D	Ilion, N. Y	Hay forks, horse	Mar. 14, 1865.
48,426	Nadow, Alexander	Springfield, Mass	Engines, steam, automatic stop-motion for	June 27, 1865.
46,693	Nagler, Robert	Brooklyn, E. D., N. Y	Tobacco pipe	Mar. 7, 1865.
51,075	Napheys, George C	Philadelphia, Pa	Lard, apparatus for refining	Nov. 21, 1865.
51,343	Napier, Henry, and John J. Hollins	Elizabeth, N. J	Glass, manufacture of	Dec. 5, 1865.
46,017	Naramor, Andrew	Berlin Heights, Ohio	Rack, hay	Jan. 24, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,743	Nash, A. Prescott	Weymouth, Mass	Boot-leg	May 16, 1865.
	Nash, Duane. (*See* Clement, Daniel B., assignor.)			
45,738	Nash, William	Watertown, N. Y	Punches, hand	Jan. 3, 1865.
51,741	Nason, James H	Franklin, Mass	Coffee percolator	Dec. 26, 1865.
48,085	Natcher, Gabriel	Sidney, Ohio	Signals, railroad	June 6, 1865.
48,831	Natcher, Gabriel	Sidney, Ohio	Mill-stone dress	July 18, 1865.
49,293	Nation, David H., and Thomas B. Hall	St. Louis, Mo	Engines, steam, oscillating	Aug. 8, 1865.
46,926	Naugle, John	Mooresville, Ind	Cultivator, hand	Mar. 21, 1865.
48,304	Naugle, John	Mooresville, Ind	Hoes, weeding	June 20, 1865.
	Navassa Phosphate Company. (*See* Leibig, Gustavus A., assignor.)			
	Needham, Wales. (*See* Nelson, John, assignor.)			
46,486	Needham, W., and J. Nelson	Rockford, Ill	Harvesters	Feb. 21, 1865.
50,264	Neefus, Peter W	New York, N. Y	Rowlock	Oct. 3, 1865.
50,615	Neely, Thomas, and Charles Bishop	Tiffin, Ohio	Thill tug	Oct. 24, 1865.
	Neemes, William, and George W. Bollman. (*See* Bollman & Neemes.)			
46,305	Neer, Charles, assignor to the Agricultural Iron Works	New York, N. Y	Window sash, metallic	Feb. 7, 1865.
2,068	Neiberg, Charles L., assignor to Sargent & Co	New Haven, Conn	Coffin handle.....(Design)	May 16, 1865.
46,487	Neil, John	Clinton, Mass	Shirt bosom	Feb. 21, 1865.
45,739	Neill, John E	Brooklyn, N. Y	Boilers, steam	Jan. 3, 1865.
	Nelson, Charles H., and Benjamin F. Day. (*See* Day & Nelson.)			
47,603	Nelson, John, assignor to self and Wales Needham	Rockford, Ill	Grain bands, device for securing	May 2, 1865.
	Nelson, J., and W. Needham. (*See* Needham & Nelson.)			
	Nettleton, Wilfred H. (*See* Hatch, Anson, assignor.)			
47,216	Neuberger, Joseph, and Peter J. Illig	Buffalo, N. Y	Cans, fruit	Apr. 11, 1865.
48,427	Neuhaus, C. A	New York, N. Y	Barrels, bungs for	June 27, 1865.
49,294	Neveil, George J	Philadelphia, Pa	Metal rods, machine for bending	Aug. 8, 1865.
48,086	Nevins, Wm	Lyons, N. Y	Fences	June 6, 1865.
49,137	Newbauer, Wm	Philadelphia, Pa	Car springs	Aug. 1, 1865.
	New Bedford Copper Company. (*See* Field, Henry, jr., assignor.)			
49,138	Newbrough, Abel	Madisonville, Ky	Churns	Aug. 1, 1865.
46,131	Newburg, Frederick D	Hudson City, N. Y	Fire-arm, revolving, rammers for	Jan. 31, 1865.
	New England Butt Company. (*See* Barden, John S., assignor.)			
	New England Butt Company. (*See* Barden, John S., assignor.)			
50,026	Newhall, Erastus	Lynn, Mass	Boot heel	Sept. 19, 1865.
49,295	Newkirk, Jacob	Factoryville, N. Y	Boilers or condensers, packing for tubes of	Aug. 8, 1865.
46,380	Newland, Thomas J	Utica, N. Y	Lights, head, locomotive	Feb. 14, 1865.
49,646	Newman, August A	Sparta, Ill	Churns	Aug. 29, 1865.
47,973	Newman, Martin	Unadilla, N. Y	Planes, edge	May 30, 1865.
48,875	Newman, Martin, assignor to self and Clark J. Hayes	Unadilla, N. Y	Sawing machines	July 18, 1865.
50,727	Newton, A. H	Worcester, Mass	Pepper box	Oct. 31, 1865.
50,487	Newton, Jeremiah L	Boston, Mass	Boots and shoes	Oct. 17, 1865.
46,018	Newton, W. S	Norwich, Conn	Hay elevating forks	Jan. 24, 1865.
	New York Desiccating Company. (*See* Bacon, F. W., assignor.)			
	New York Desiccating Company. (*See* Rand, W. J., assignor.)			

	New York Pier and Warehouse Company. (*See* Hyde, J. B., assignor.)			
2,019	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Jan. 17, 1865.
2,020	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Jan. 17, 1865.
2,021	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Jan. 17, 1865.
2,022	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Jan. 17, 1865.
2,023	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Jan. 17, 1865.
2,024	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Jan. 17, 1865.
2,025	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Jan. 17, 1865.
2,026	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Jan. 17, 1865.
2,046	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Apr. 11, 1865.
2,047	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Apr. 11, 1865.
2,048	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Apr. 11, 1865.
2,049	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Apr. 11, 1865.
2,050	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Apr. 11, 1865.
2,051	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Apr. 11, 1865.
2,073	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	May 30, 1865.
2,074	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	May 30, 1865.
2,075	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	May 30, 1865.
2,076	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	May 30, 1865.
2,077	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	May 30, 1865.
2,136	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	July 18, 1865.
2,152	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Aug. 1, 1865.
2,174	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Sept. 19, 1865.
2,175	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Sept. 19, 1865.
2,176	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Sept. 19, 1865.
2,204	Ney, Elemir J., assignor to the Lowell Manufacturing Company	Lowell, Mass	Carpet pattern (Design)	Oct. 17, 1865.
51,284	Neynaber, A. F. W	Philadelphia, Pa	Cooking apparatus, steam	Nov. 28, 1865.
51,118	Nicholls, William W., assignor to self and Daniel Price	Lockport, N. Y	Paint oil	Nov. 21, 1865.
46,381	Nichols, Ambrose J	Providence, R. I	Warp dressing and weaving, expansible reed for	Feb. 14, 1865.
50,265	Nichols, David M	New York, N. Y	Steam generators, blowers for	Oct. 3, 1865.
48,832	Nichols, Edmund T., assignor to self and F. M. Nichols	Joliet, Wis	Marble-polishing machine	July 18, 1865.
	Nichols, G. H. (*See* Taggert, Chichester & Mills, assignors.)			
46,578	Nichols, James, and William Batty	Cincinnati, Ohio	Powder for facing moulds	Feb. 28, 1865.
49,139	Nichols, William H., and Horatio H. Abbe	Chatham, Conn	Nails, tacks, &c., lathe for turning heads of	Aug. 1, 1865.
45,850	Nicholson, William T	Providence, R. I	File blanks, machine for forging	Jan. 10, 1865.
	Nicholson, William T. (*See* Crum, John, assignor.) Disclaimer.			
	Nickels, E. A., *et al.* (*See* Hiscock, Joseph H., assignor,)			
50,616	Nickelson, C. S	Caxton, N. Y	Bell, door	Oct. 24, 1865.
	Nickelson, James, and Reuben C. Grover. (*See* Grover & Nickelson.)			
47,974	Nickerson, Robert S., and James Wallace	Philadelphia, Pa	Hats	May 30, 1865.
47,033	Nicolai, John L	Chicago, Ill	Track layer	Mar. 28, 1865.
47,560	Niederpruem, Nicholas	Buffalo, N. Y	Sewing machines, means for adjusting the driving wheel of	May 2, 1865.
48,712	Niles, E. G	Cincinnati, Ohio	Range, cooking	July 11, 1865.
51,264	Niles, Peter H., assignor to self and Augustus Russ	Boston, Mass	Cans, preserve	Nov. 28, 1865.
45,851	Nimbs, A. B	Buffalo, N. Y	Elevators	Jan. 10, 1865.
47,323	Nimbs, A. B	Buffalo, N. Y	Pulleys, tension	Apr. 18, 1865.
50,771	Nimbs, A. B., assignor to self and John C. Clifford	Buffalo, N. Y	Journal box, railroad	Oct. 31, 1865.
48,713	Nimmo, George	Jersey City, N. J	Crucibles, drying and preparing	July 11, 1865.
48,973	Nimmo, George	Jersey City, N. J	Castings, composition for	July 25, 1865.
49,140	Nimmo, George	Jersey City, N. J	Crucibles, moulding	Aug. 1, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or diseovery.	Date.
49,141	Nimmo, George	Jersey City, N. J	Crucibles, manufacture of	Aug. 1, 1865.
46,488	Nishwitz, Frederick	Brooklyn, N. Y	Harvesters	Feb. 21, 1865.
	Nixon, N. R. (*See* McGirr, Thomas, assignor.)			
47,217	Nixon, Theodore A	Philadelphia, Pa	Paper pulp, treating straw to obtain	Apr. 11, 1865.
50,266	Nixon, Theodore A	Philadelphia, Pa	Straw, boiler for treating	Oct. 3, 1865.
	Nixon, William A., and J. S. Everhard. (*See* Morgan, J. C., assignor.)			
48,974	Noble, Butler G	New York, N. Y	Tuyere, adjustable	July 25, 1865.
48,714	Noble, Charles	New York, N. Y	Gas, manufaeture of	July 11, 1865.
48,023	Nobles, Milton V., assignor to self and John C. Nobles	Rochester, N. Y	Door knobs, rose for	May 30, 1866.
48,024	Nobles, Milton V., assignor to self and John C. Nobles	Roehester, N. Y	Door knobs to their shanks, fastening	May 30, 1865.
48,025	Nobles, Milton V., assignor to self and John C. Nobles	Roehester, N. Y	Door knobs to their shanks, fastening	May 30, 1865.
48,346	Nobles, Milton V., assignor to self and John C. Nobles	Rochester, N. Y	Bit stocks	June 20, 1865.
51,660	Nobles, Milton V., assignor to self and John C. Nobles	Rochester, N. Y	Bit holders for braces	Dec. 19, 1865.
46,815	Noé, Charles L	Bergen Point, N. J	Drills	Mar. 14, 1865.
49,544	Noé, Charles L	Bergen Point, N. J.	Well, oil, tubes, packing for	Aug. 22, 1865.
50,618	Noé, Lewis F	New York, N. Y	Swings	Oct. 24, 1865.
1,846	Norcross, Joseph W	Middletown, Conn.	Row-loek (Reissue)	Jan. 3, 1865.
2,042	Norcross, Joseph W	Middletown, Conn.	Tackle hook (Reissue)	Aug. 1, 1865.
45,852	Norcross, Joseph W	Middletown, Conn.	Fence, wire	Jan. 10, 1865.
46,132	Noreross, Joseph W	Middletown, Conn.	Row-lock	Jan. 31, 1865.
46,816	Norcross, Joseph W	Middletown, Conn.	Row-loek	Mar. 14, 1865.
47,322	Norcross, Joseph W	Middletown, Conn.	Tackle hook	Apr. 18, 1865.
47,656	Noreross, Joseph W	Middletown, Conn.	Tackle blocks, casting	May 9, 1865.
48,975	Noreross, Joseph W	Middletown, Conn.	Row-loek	July 25, 1865.
50,379	Noreross, Joseph W	Middletown, Conn.	Tackle bloeks	Oct. 10, 1865.
51,742	Norcross, Joseph W	Middletown, Conn.	Hoisting tackle	Dec. 26, 1865.
	Norfolk, E. L., and J. A. Bassett. (*See* Bassett & Norfolk.)			
50,772	Norman, William, assignor to self and James B. Stone	Van Buren, Ark	Presses for baling cotton	Oct. 31, 1865.
	Norris, Samuel. (*See* Rodier, Louis C., assignor.)			
48,087	North, Albert H	Naubue, Conn	Steering apparatus	June 6, 1865.
46,489	North, Oliver B	New Haven, Conn	Saddle tree, harness	Feb. 21, 1865.
47,244	North, Oliver B., assignor to O. B. North & Co	New Haven, Conn	Saddles, harness	Apr. 11, 1865.
49,432	Norton, Marcus P	Troy, N. Y	Stamp, cancelling. (Antedated August 4, 1865)	Aug. 15, 1865.
47,975	Norwood. C	Bloomington, Ill.	Cultivator and seeder combined	May 30, 1865.
48,200	Nott, Aaron B	Fairhaven, Mass	Ovens, detaehable	June 13, 1865.
51,610	Nowlan, Samuel	New York, N. Y	Steam generators, safety valves for	Dec. 19, 1865.
49,780	Noyes, F. V	Mattoon, Ill	Mat, door	Sept. 5, 1865.
47,324	Noyes, John H	Oneida, N. Y	Bag, luneh, travelling	Apr. 18, 1865.
51,611	Noyes, Person	Lowell, Mass	Lamp wieks	Dec. 19, 1865.
47,903	Noyes, William H., assignor to self and Charles H. Wheadon	Homer, N. Y	Thill tug	May 23, 1865.
48,088	Nudd, Amos	Wampum, Wis	Butter moulding machine	June 6, 1865.
	Nun, P., *et al.* (*See* Liebermann, Henry, assignor.)			
	Nutter, Edward M., and John Smith. (*See* Smith & Nutter.)			

50,837	Nutting, Isaac F	Palmer, Mass	Ploughs, wheel	Nov. 7, 1865.
1,960	Nyce, Benjamin M	Cleveland, Ohio	Preserving fruits and other perishable substances ...(Reissue)..	May 16, 1865.
2,036	Nyce, Benjamin M	Cleveland, Ohio	Preserving fruits, &c., houses for.. (Division 1 of reissue).....	July 25, 1865.
2,037	Nyce, Benjamin M	Cleveland, Ohio	Preserving fruit and other perishable substances. (Division 2 of reissue.)	July 25, 1865.
2,038	Nyce, Benjamin M	Cleveland, Ohio	Preserving fruit and other perishable substances. (Division 3 of reissue.)	July 25, 1865.
50,267	Nyce, Benjamin M	Cleveland, Ohio	Granary	Oct. 3, 1865.
51,119	Nyce, William, assignor to George Nyce	Three Rivers, Mich	Soap	Nov. 21, 1865.
45,853	Nye, G. H	Monmouth, Ill	Baling, device for preparing hay for	Jan. 10, 1865.
47,325	Oaks, Henry	Waynesboro', Pa	Locks	Apr. 18, 1865.
48,428	Ober, G. H	Newburg, Ohio	Lathes, wood-turning	June 27, 1865.
	Oborn, Charles, and Sidney Maltby. (*See* Maltby & Oborn.)			
1,865	O'Brien, Lawrence	Indianapolis, Ind	Carding machines ....(Reissue)..	Feb. 7, 1865.
1,891	O'Brien, William D	Brooklyn, N. Y	Railroad rails ....(Reissue)..	Feb. 28, 1865.
47,683	Ochiltree, S. P., and E. C. Johnson, assignors to S. P. Ochiltree, W. S. Weir, and N. P. Baymount.	Monmouth, Ill	Saw-filing machine	May 9, 1865.
	O'Connor, Thomas J. (*See* Williams, William L., assignor.)			
50,488	Odell, Francis	New York, N. Y	Stools, piano-forte, base for	Oct. 17, 1865.
51,743	O'Donald, James	Clinton, Ill	Clothes-wringer	Dec. 26, 1865.
51,344	Oeding, John	San Francisco, Cal	Lamps and gas burners, reflector for	Dec. 5, 1865.
48,500	Oest, Theodore L., assignor to Henry Maurer and Adam Weber	Prussia	Enamel	June 27, 1865.
51,744	Oesterle, Herman A	Philadelphia, Pa	Fabrics, netted or laced, machine for making	Dec. 26, 1865.
45,740	Ogborn, Harrison	Richmond, Ind	Screen, grain	Jan. 3, 1865.
50,947	Ogborn, Harrison	Richmond, Ind	Planes, splint	Nov. 14, 1865.
45,796	Ogborn, Harrison, assignor to self and Almond T. Chapin	Richmond, Ind	Mills, fanning, and grain separators	Jan. 3, 1865.
	Ohio Erolin Company. (*See* Davies, George C., assignor.)			
51,612	Ohmer, Augustus J	Hamilton, Ohio	Refreshment fountain, portable	Dec. 19, 1865.
	Olbivier, Achille, and Auguste Desgoffe. (*See* Desgoffe & Olbivier.)			
48,089	Old, James	Pittsburg, Pa	Pumps, deep well	June 6, 1865.
49,142	Old, James	Pittsburg, Pa	Pipe-couplings	Aug. 1, 1865.
50,619	Old, James	Pittsburg, Pa	Pipe-couplings	Oct. 24, 1865.
	Old, James, and Marshall D. Wellman. (*See* Wellman & Old.)			
	Old, James, and Marshall D. Wellman. (*See* Wellman & Old.)			
45,741	Olds, A. M	Chicago, Ill	Measures, lumber	Jan. 3, 1865.
46,019	Olds, A. M	Chicago, Ill	Coal screen	Jan. 24, 1865.
49,781	Olds, A. M	Chicago, Ill	Ash-sifting shovels. (Antedated August 25, 1865)	Sept. 5, 1865.
46,694	Olds, A. W	Green Oaks, Mich	Ladder, fruit	Mar. 7, 1865.
49,143	Olds, A. W	Green Oaks, Mich	Breeching strap fastenings	Aug. 1, 1865.
48,833	Olds, E. F	New Hudson, Mich	Houses for preserving fruits, &c	July 18, 1865.
49,545	Olds, Henry H	New Haven, Conn	Carriage springs	Aug. 22, 1865.
48,715	Olds, Otra	Aurora, N. Y	Vessels in shoal water, wheel for the propulsion of	July 11, 1865.
47,363	Oliver, Thomas O., assignor to self and William H. Farrar	New York, N. Y	Barrels, &c., petroleum, lining	Apr. 18, 1865.
48,026	Oliver, William G., assignor to self, S. O. Bigelow, G. H. Randel, and D. P. Benson.	Buffalo, N. Y	Wells, oil and other, drill for	May 30, 1865.
50,728	Olmstead, Chauncey L	Brooklyn, N. Y	Skirt, hoop, apparatus for clasping	Oct. 31, 1865.
47,446	Olmsted, L. H	Newark, N. J	Ratchet brace	Apr. 25, 1865.
47,561	Olmsted, L. H	Newark, N. J	Lubricator	May 2, 1865.
48,090	Olmsted, S. J	Binghamton, N. Y	Rein holder	June 6, 1865.
50,838	Olney, Hiram W	Alleghany, Pa	Augers to their handles, attaching	Nov. 7, 1865.
51,345	Olsaver, Thomas J., and William P. Elliott	Aurora, Ill	Windows, &c., enamelled blinds for	Dec. 5, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
48,429	O'Neil, John H	Pittsburg, Pa	Ash sifter	June 27, 1865.
49,546	O'Neill, Andrew	Portsmouth, Ohio	Boilers, sheet metal	Aug. 22, 1865.
50,380	O'Neill, Patriek B	St. Mary's Villa, G. Britain	Salinometers	Oct. 10, 1865.
47,505	Orioli, Z. G. A. N. P., A. A. Fredet, and P. A. H. Matussiere	France	Paper pulp, mode of disintegrating vegetable substances for	Apr. 25, 1865.
	Orme, Jonathan H., and William M. Knight. (*See* Knight & Orme.)			
46,382	Ormsbee, Mareus	New York, N. Y.	Pieture frames	Feb. 14, 1865.
46,927	Ormsbee, Mareus	New York, N. Y.	Photographie prints, washing	Mar. 21, 1865.
47,744	Ormsby, Waterman L.	Jersey City, N. J	Bank-note engraving	May 16, 1865.
47,745	Ormsby, Waterman L.	Jersey City, N. J	Engraving metallie plates, apparatus for	May 16, 1865.
49,910	Orth, Samuel	Philadelphia, Pa	Pasteboard, maehine for cutting and scoring	Sept. 12, 1865.
46,928	Orton, M. S.	Galesburg, Ill	Planter, corn, hand	Mar. 21, 1865.
46,490	Orwig, Thomas G.	New York, N. Y.	Projeetiles	Feb. 21, 1865.
46,579	Osborn, Charles L.	Brooklyn, N. Y.	Bird eage	Feb. 28, 1865.
47,562	Osborn, H. S	Belvidere, N. J	Nitrate of potash, preparation of	May 2, 1865.
50,879	Osborne, David M., assignor to self and William A. Kirby	Auburn, N. Y	Harvesters, Pitman eonneetions for	Nov. 7, 1865.
50,880	Osborne, David M., assignor to self and William A. Kirby	Auburn, N. Y	Harvesters, Pitman conneetions for	Nov. 7, 1865.
50,839	Osgood, Hudson	Hartland, Maine	Clapboards	Nov. 7, 1865.
48,581	Osgood, Jason C.	Troy, N. Y.	Exeavator	July 4. 1865.
48,976	Osgood, Pelatiah	Waterville, Maine	Railway	July 25, 1865.
49,144	Osgood, Robert T.	Orland, Maine	Bottle stopper	Aug. 1, 1865.
46,861	Osmond, Edmund	Cincinnati, Ohio	Stoves, gas burners for	Mar. 14, 1865.
46,580	Otis, Charles R	Yonkers, N. Y.	Hoisting apparatus	Feb. 28, 1865.
47,773	Otis, Charles R., assignor to self and Norton P. Otis	Yonkers, N. Y.	Hoisting apparatus, steam	May 16, 1865.
51,076	Otis, Charles R. and Norton P	Yonkers, N. Y.	Hoisting apparatus, steam	Nov. 21, 1865.
	Otis, F. S., *et al.* (*See* Rugg, Datus E., assignor.)			
	Otis, George W.	Lynn, Mass	Lightning rods, insulators for (Extension)	Aug. 25, 1865.
	Otis, George W. (*See* Samuels, James, assignor.)			
51,346	Otis, J. L.	Florence, Mass	Sewing maehines, thread-tension deviee for	Dec. 5, 1865.
47,852	Otis, John L., and / Samuel L. Otis	Florence, Mass / Manehester, Conn	Knitting-maehine needles	May 23, 1865.
47,657	Otis, N. P	Yonkers, N. Y.	Propeller, eanal	May 9, 1865.
51,077	Otis, Norton P.	Yonkers, N. Y.	Pulleys, loose	Nov. 21, 1865.
47,497	Ott, W. Adolph, assignor to self and Henry Jackson	Brooklyn, N. Y.	Ores, auriferous, process for treating	Apr. 25, 1865.
51,613	Otterson, T. G.	Port Elizabeth, N. J	Jars, fruit, eovers for	Dec. 19, 1865.
47,447	Overpeek, Isaac E	Overpeek's Station, Ohio	Manual power	Apr. 25, 1865.
47,326	Oviatt, S. E	Riehfield, Ohio	Threshing machine	Apr. 18, 1865.
46,817	Paeker, Daniel F	Reading, Conn	Soap	Mar. 14, 1865.
49,647	Paeker, George W., jr	Mystie River, Conn	Wall builders and stump extraetors	Aug. 29, 1865.
	Paeker, J., and J. H. Shear. (*See* Williams, A. C., assignor.)			
	Paddock, J., *et al.* (*See* Randolph M., assignor.)			
49,911	Padon, John S	Summerfield, Ill	Ploughs, gang	Sept. 12, 1865.
51,209	Page, Albert G.	Augusta, Me	Car eoupling	Nov. 21, 1865.
48,091	Page, Austin Z.	Weaversville, Cal.	Vessels, sunken, mode of raising	June 6, 1865.
48,988	Page, Edwin F.	Brooklyn, N. Y.	Harvesters	July 25, 1865.

49,547	Page, John G	Rockford, Ill	Cultivators	Aug. 22, 1865.
51,745	Page, John G	Rockford, Ill	Cotton seed, process for cleaning	Dec. 26, 1865.
	Page, J. W. H. (*See* Tufts, Timothy, assignor.)			
46,929	Page, Samuel N	Salona, Pa	Harvesting machines	Mar. 21, 1865.
46,930	Page, Samuel N	Salona, Pa	Harvesters, raking attachments to	Mar. 21, 1865.
47,563	Pagett, George W	Adams Township, Ind	Traps, animal	May 2, 1865.
50,268	Paine, Clinton J	Painesville, Ohio	Stoves, cooking	Oct. 3, 1865.
47,124	Paine, George C	San Francisco, Cal	Presses, baling	Apr. 4, 1865.
48,716	Paine, Joseph C	Dubuque, Iowa	Stove-pipe drums	July 11, 1865.
46,020	Paine, J. H	Hartford, Conn	Engine, steam, cut-offs for	Jan. 24, 1865.
	Paine, Lyman S. (*See* Murphy, Griffith M., assignor.)			
49,782	Painter, William	Baltimore, Md	Metal, sheet, bands, &c., method of joining	Sept. 5, 1865.
	Painter, William, assignor to self and Charles Painter	Baltimore, Md	Boxes, &c., material for making	Jan. 17, 1865.
50,027	Pallissard, P	St. Anne, Ill	Jar, fruit	Sept 19, 1865.
48,989	Palmenberg, Joseph R	New York, N. Y	Stand for ladies' cloaks	July 25, 1865.
49,145	Palmenberg, Joseph R	New York, N. Y	Stand for ladies' figures	Aug. 1, 1865.
51,746	Palmer, Aaron	Rockport, N. Y	Mowing machines	Dec. 26, 1865.
	Palmer, Aaron, and Stephen G. Williams	Rockport, Ill	Harvesters (Extension)	June 29, 1865.
	Palmer, Aaron, and Stephen G. Williams	Janesville, Wis	Harvesters (Extension)	June 29, 1865.
49,433	Palmer, Alonzo	Hudson, Mich	Warmer, foot	Aug. 15, 1865.
47,327	Palmer, Charles L	Brookline, Mass	Warmer, foot	Apr. 18, 1865.
	Palmer, Charles S. (*See* Pfeiffer, Frank, assignor.)			
50,948	Palmer, Ebenezer P	Milton, Del	Journal boxes for land carriages	Nov. 14, 1865.
49,146	Palmer, George	Littlestown, Pa	Preserving wood, &c	Aug. 1, 1865.
50,269	Palmer, George	Littlestown, Pa	Rakes, horse	Oct. 3, 1865.
51,473	Palmer, George N	Greene, N. Y	Rake, horse, and hay-spreader, combined	Dec. 12, 1865.
46,581	Palmer, George T	Brooklyn, N. Y	Soda-water cooler and draught pedestal	Feb. 28, 1865.
51,078	Palmer, Henry H	Rockford, Ill	Horseshoes	Nov. 21, 1865.
46,383	Palmer, Ira A	Monmouth, Ill	Cultivators	Feb. 14, 1865.
1,932	Palmer, Isaac E	Middletown, Conn	Tackle blocks (Reissue)	Apr. 11, 1865.
48,990	Palmer, Isaac H	Lodi, Wis	Evaporator	July 25, 1865.
48,991	Palmer, Jeremiah	Oriskany, N. Y	Planter, corn, and cultivator, combined	July 25, 1865.
48,305	Palmer, Jesse	Cleveland, Ohio	Knife polisher	June 20, 1865.
50,153	Palmer, John	Sandisfield, Mass	Vessels, steam, apparatus for ejecting refuse matter from	Sept. 26, 1865.
47,746	Palmer, Nelson	Hudson, N. Y	Threshing machines	May 16, 1865.
51,347	Palmer, Oliver	Cincinnati, Ohio	Pumps, rotary	Dec. 5, 1865.
	Pancoast, George, and E. P. Archer. (*See* Deavs, Charles, ass'r.)			
50,885	Paraf, Alfred	France	Printing and dyeing cotton, linen, &c	Nov. 7, 1865.
46,133	Param, Charles	Philadelphia, Pa	Sewing-machine stitch	Jan. 31, 1865.
49,783	Parham, John, jr	Philadelphia, Pa	Well, oil, tubes, packing for	Sept. 5, 1865.
50,620	Parise, John A., and C. W. MacCord	New York, N. Y	Pitcher, molasses	Oct. 24, 1865.
48,027	Park, A. W., assignor to self and C. J. Winters	Norwich, Conn	Tools	May 30, 1865.
51,407	Park, John E	Sequin, Texas	Tanning	Dec. 5, 1865.
50,881	Parke, Thomas J., assignor to self, J. Bryan, T. Gillespie, and E. A. Hintsicker.	Philadelphia, Pa	Well-boring apparatus	Nov. 7, 1865.
	Parker, Alonzo. (*See* Draper, William W., assignor.)			
	Parker, Charles. (*See* Goodyear, Stephen W., assignor.)			
	Parker, Charles. (*See* Buckley, Charles, assignor.)			
48,582	Parker, Charles H., and Gridley Burnham	Waltham, Mass	Pan and brush, dust	July 4, 1865.
50,270	Parker, Charles H., and Gridley Burnham	Waltham, Mass	Pan and brush, dust	Oct. 3, 1865.
	Parker, Edmund. (*See* Miller, Wm. H., and Geo. W., assignors.)			
47,218	Parker, Edwin A	Horseheads, N. Y	Stoves	Apr. 11, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
49,296	Parker, John E	West Meriden, Conn	Bolt, door	Aug. 8, 1865.
	Parker, John E., and H. J. P. Whipple. (*See* Cinquini, Pietro, assignor.) Design.			
48,583	Parkhurst, David	Gloucester, Mass	Paint for ships' bottoms	July 4, 1865.
47,976	Parkhurst, S. R., assignor to Emily R. Parkhurst	Bloomfield, N. J	Wool and other fibrous material to picking, carding, and other similar machines, means for feeding.	May 30, 1865.
48,201	Parkinson, Benjamin F	Washington, Pa	Fire-arms, magazine	June 13, 1865.
	Parks, E., *et al.* (*See* Batcheller, Charles, assignor.)			
47,658	Parks, Levi N	Winchendon, Mass	Spools, mode of fastening the heads to	May 9, 1865.
1,907	Parmelee, Du Bois D	New York, N. Y	Legs, artificial (Reissue)	Mar. 21, 1865.
1,908	Parmelee, Du Bois D	New York, N. Y	Legs, artificial (Division of reissue)	Mar. 21, 1865.
48,992	Parmelee, Du Bois D., assignor to Charles L. Richards	New York, N. Y	Rubber, hard, or vulcanite, manufacture of	July 25, 1865.
48,993	Parmelee, Du Bois D., assignor to Charles L. Richards	New York, N. Y	Rubber, hard, manufacture of	July 25, 1865.
46,759	Parmelee, S. T., assignor to Parmelee Piano Company	New Haven, Conn	Piano-fortes	Mar. 7, 1865.
47,853	Parmenter, Orange S	Providence, R. I	Jewelry, plates, &c., machines for ornamenting	May 23, 1865.
45,854	Parr, George	Buffalo, N. Y	Screwdrivers, mode of manufacturing	Jan. 10, 1865.
51,614	Parr, Samuel	Boston, Mass	Broom clasp	Dec. 19, 1865.
50,729	Parrot, J. D	Morristown, N. J	Harrow, rotary	Oct. 31, 1865.
47,506	Parry, George	England	Iron and steel, manufacture of. (Patented in England November 18, 1861.)	Apr. 25, 1865.
48,994	Parry, George T	Philadelphia, Pa	Wells, oil, devices for	July 25, 1865.
50,773	Parry, George T., assignor to Robert B. Barker	Philadelphia, Pa	Boilers, steam, preventing incrustation of	Oct. 31, 1865.
45,855	Parry, George T., and William S. Warner	Philadelphia, Pa	Barrels, oil, &c., from leaking, method of preventing	Jan. 10, 1865.
48,584	Parry, George T., and William S. Warner	Philadelphia Pa	Heating oil wells by electricity	July 4, 1865.
51,615	Parshall, Charles H	Detroit, Mich	Press, hay and cotton	Dec. 19, 1865.
50,621	Parsons, Calvin, and B. S. Dane	Rome Centre, Mich	Washing machine	Oct. 24, 1865.
	Parsons, H. H., and J. N. Scranton. (*See* Scranton & Parsons.)			
	Parsons, H. K. (*See* Mumma, Jacob H., assignor.) Reissue.			
51,616	Parsons, John H	Quincy, Mich	Umbrellas	Dec. 19, 1865.
48,834	Parsons, William B	Granger, N. Y	Harvesters, rake attachments to	July 18, 1865.
	Portrage, John A. (*See* Smith, Joseph N., assignor.)			
46,972	Partridge, Allen, assignor to self and Butterfield & Haven	Medway, Mass	Mallets	Mar. 21, 1865.
49,648	Partridge, William	Philadelphia, Pa	Cars, railroad	Aug. 29, 1865.
2,214	Paterson, James, assignor to D., A. E., and D. Powers	Elizabeth, N. J	Floor oil-cloth pattern (Design)	Oct. 31, 1865.
2,236	Paterson, James, assignor to Edward Harvey	Elizabeth, N. J	Floor oil-cloth	Dec. 26, 1865.
47,328	Patrick, John S	Victor, N. Y	Air compressing apparatus	Apr. 18, 1865.
50,154	Patrick, John S	Victor, N. Y	Pipe, water. (Antedated September 18, 1865.)	Sept. 26, 1865.
46,491	Patrick, Samuel	Galesburg, Ill	Heating carving tables	Feb. 21, 1865.
51,348	Pattee, J. H., and E. S. Cleveland	Galva, Ill	Dryer, grain	Dec. 5, 1865.
49,649	Patterson, Andrew	Birmingham, Pa	Hoes, manufacture of	Aug. 29, 1865.
45,934	Patterson, Elias C	Chicago, Ill	Cultivators	Jan. 17, 1865.
46,818	Patterson, John A	Statelick, Pa	Wells, oil, or other, tubes for caves in	Mar. 14, 1865.
50,155	Patterson, Robert D	Cincinnati, Ohio	Hydrants	Sept. 26, 1865.
47,977	Patterson, William	Salem, N. J	Scraper, road	May 30, 1865.
46,582	Paullins Daniel, H	Loudonville, Ohio	Engines, steam	Feb. 28, 1865.

	Paxton, John, *et al.* (*See* Custor, George, assignor.)			
50,489	Payne, Brigham	South Coventry, Conn	Cartridge cases, machine for necking	Oct. 17, 1865.
46,058	Payne Edward	England	Spirits and distillates, apparatus for measuring and testing	Jan. 24, 1865.
45,935	Payne, F. C.	New York, N. Y.	Fuel, artificial	Jan. 17, 1865.
50,622	Payne, F. C.	New York, N. Y.	Spring, spiral	Oct. 24, 1865.
1,941	Payne, F. C.	New York, N. Y.	Bed bottom, folding (Reissue)	Apr. 25, 1865.
	Payson, James G. (*See* Westcott & Walcott, assignors.)			
1,866	Peabody, Francis	Salem, Mass.	Music, keyed instrument of (Reissue)	Feb. 7, 1865.
50,381	Peabody, Francis	Salem, Mass.	Musical instruments	Oct. 10, 1865.
49,912	Peabody, George L.	New York, N. Y.	Umbrellas	Sept. 12, 1865.
48,202	Peabody, J.	Dixmont Centre, Maine	Pumps	June 13, 1865.
51,210	Peabody, Jefferson	Dixmont Centre, Maine	Buckle	Nov. 28, 1865.
45,742	Peace, John	Camden, N. J.	Stock, cutter	Jan. 3, 1865.
48,431	Peace, John	Camden, N. J.	Clamp, gas-fitters'	June 27, 1865.
51,747	Pearson, Benjamin	Salem, Mass.	Wagon wheel	Dec. 26, 1865.
51,748	Pearson, David J.	Boston, Mass.	Spoons, invalid	Dec. 26, 1865.
49,434	Pearson, Samuel	Cincinnati, Ohio	Bed bottom	Aug. 15, 1865.
46,931	Pease, F. S.	Buffalo, N. Y.	Oil ejectors	Mar. 21, 1865.
47,034	Pease, F. S.	Buffalo, N. Y.	Oil ejectors	Mar. 28, 1865.
48,430	Pease, F. S.	Buffalo, N. Y.	Cocks, three-way	June 27, 1865.
51,474	Pease, F. S.	Buffalo, N. Y.	Pumps	Dec. 12, 1865.
46,695	Pease, James N.	Panama, N. Y.	Churn	Mar. 7, 1865.
47,774	Pease, James N., assignor to M. Harris and R. G. Bush	Panama, N. Y.	Clothes wringer	May 16, 1865.
49,043	Pease, James N., assignor to the Metropolitan Washing Machine Company.	Panama, N. Y.	Wringing machine	July 25, 1865.
50,730	Pease, John	Boston, Mass	Cartridge boxes	Oct. 31, 1865.
48,306	Pease, W. H	Dayton, Ohio	Tobacco dryer	June 20, 1865.
49,784	Peavey, A. J.	South Montville, Maine	Knife, pocket, and pistol, combined	Sept. 5, 1865.
2,205	Peck, Albert	New York, N. Y.	Collar, paper (Design)	Oct. 17, 1865.
46,492	Peck, C. C.	Black Hawk, Col. Ter.	Amalgamator	Feb. 21, 1865.
51,079	Peck, C. C.	Black Hawk, Col. Ter.	Amalgamator	Nov. 21, 1865.
48,835	Peck, Loren G.	Rouseville, Pa.	Well drills	July 18, 1865.
	Peck, Milo	New Haven, Conn.	Presses, drop (Extension)	Nov. 24, 1865.
2,032	Peckham, Merritt	Utica, N. Y.	Furnace, agricultural (Design)	Feb. 21, 1865.
47,747	Peckham, William H.	New York, N. Y.	Railway chairs	May 16, 1865.
	Peebles, A. A., *et al.* (*See* Brown, John E., assignor.)			
49,147	Peet, John T.	Cincinnati, Ohio	Frames, bottles, &c., composition for	Aug. 1, 1865.
2,168	Peirce, Francis J., assignor to Roxbury Carpet Company	Roxbury, Mass.	Carpet pattern (Design)	Sept. 12, 1865.
2,192	Peirce, Francis J., assignor to Roxbury Carpet Company	Roxbury, Mass.	Carpet pattern (Design)	Oct. 10, 1865.
1,921	Peirce, Gidcon	Ercildown, Pa.	Rakes, horse (Reissue)	Mar. 28, 1865.
2,206	Peirce, Isaac Newton	Philadelphia, Pa.	Bottle, glass (Design)	Oct. 17, 1865.
2,095	Peirce, Isaac Newton	Philadelphia, Pa.	Composition for slate surface, blacking, &c (Reissue)	Oct. 24, 1865.
46,493	Peirce, Thomas W.	Richfield, Minn.	Stock feeder	Feb. 21, 1865.
49,785	Peirce, T. W.	Minneapolis, Minn.	Stripping cane, device for	Sept. 5, 1865.
50,382	Pell, Alfred	New York, N. Y.	Signals, railroad	Oct. 10, 1865.
47,329	Pelton, Theodore G.	Lyons, Iowa	Hog-tamer	Apr. 18, 1865.
49,148	Pelton, Theodore G., and James Brewer	Lyons, Iowa / Albany, Ill.	Lubricators	Aug. 1, 1865.
	Pelton, W. T., and Arnold Kreucher. (*See* Kreucher & Pelton.)			
47,035	Penfield, Ebenezer	Oberlin, Ohio	Medical compound	Mar. 28, 1865.
	Penfield, Ira K. and Elmore. (*See* Frisbie, Russell, assignor.)			
50,490	Peniston, A. M.	Avon, Ill.	Weather strips	Oct. 17, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
46,423	Penketh, James, assignor to self and John E. Eastman	Chicago, Ill	Furnace doors for boilers	Feb. 14, 1865.
1,961	Penn, Worden P	Belleville, Ill	Harvesters (Reissue)	May 16, 1865.
48,432	Penn, W. P., J. Geiss, and J. Brosius	Belleville, Ill	Drills, grain	June 27, 1865.
51,617	Penney, J. W., and E. M. Thurston	Mechanics' Falls, Maine	Wrench	Dec. 19, 1865.
47,498	Pennie, Henry, and Charles Chinnock, assignors, through mesne assignments, to themselves.	New York, N. Y	Feed bags	Apr. 25, 1865.
46,261	Pennock, Samuel	Kennett Square, Pa	Metal, sheet, machine for bending	Feb. 7, 1865.
49,913	Penny, B. F	Rochester, N. Y	Splitting machines, wood	Sept. 12, 1865.
46,583	Pennypacker, John	Charlestown, Pa	Rakes, horse	Feb. 28, 1865.
	Pennypacker, William G. (*See* Connery, James, assignor.)			
46,584	Penoyer, Hiram	Centralia, Ill	Bechives	Feb. 28, 1865.
51,618	Pepper, John	Lowell, Mass	Knitting machines	Dec. 19, 1865.
	Pepper, John. (*See* Wallis, Samuel, assignor.)			
48,995	Percival, George G	Brooklyn, N. Y	Faucets	July 25, 1865.
48,996	Percival, George G	Brooklyn, N. Y	Tumblers, pitchers, &c	July 25, 1865.
50,078	Percival, Levin C., assignor to self and E. H. Deemer	Philadelphia, Pa	Horse, rocking	Sept. 19, 1865.
46,021	Percy, George R	New York, N. Y	Barrels impervious to oil, &c., composition for rendering	Jan. 24, 1865.
46,022	Percy, George R	New York, N. Y	Compound for condensing milk and uncrystallizable sugar	Jan. 24, 1865.
46,585	Percy, George R	New York, N. Y	Glucose, manufacture of	Feb. 28, 1865.
46,973	Percy, Samuel R., and Walter S. Wells, assignors to G. R. Percy and W. S. Wells.	New York, N. Y	Hops, process for obtaining a condensed extract of	Mar. 21, 1865.
47,854	Peregoy, Franklin P	Indian Valley, Cal	Shafting	May 23, 1865.
46,134	Perkins, A. H	Chicago, Ill	Pipes, under-ground, process for manufacturing. (Antedated Jannary 6, 1865.)	Jan. 31, 1865.
	Perkins, Daniel S. (*See* Davis, H. V., assignor.)			
47,125	Perkins, James, and William H. Burnet	Newark, N. J	Petroleum, apparatus for refining and distilling	Apr. 4, 1865.
46,819	Perkins, John M., and Mark H. House	Cleveland, Ohio	Lamps	Mar. 14, 1865.
48,585	Perkins, John M., and Mark H. House	Cleveland, Ohio	Oil cans	July 4, 1865.
	Perkins, Wm. F., and L. L. Fuller. (*See* Dunscomb, Edw'd, ass'or.)			
46,135	Perley, Charles	New York, N. Y	Bits, riding or warping	Jan. 31, 1865.
48,836	Perley, Charles	New York, N. Y	Vessels, deck and side lights for	July 18, 1865.
49,435	Perley, Charles	New York, N. Y	Band for bundles	Aug. 15, 1865.
51,475	Perley, Charles	New York, N. Y	Ordnance, operating	Dec. 12, 1865.
1,880	Perley, Charles	New York, N. Y	Ram, naval, for the destruction of enemies' ships (Reissue)	Feb. 21, 1865.
50,271	Perrett, Stephen	Yonkers, N. Y	Sewing machines, marking attachment for. (Patented in England February 8, 1865.)	Oct. 3, 1865.
48,246	Perrin, Antoine	France	Knapsack	June 13, 1865.
48,997	Perrin, William	Andover, Mass	Yokes, ox	July 25, 1865.
49,914	Perrine, Peter	Little Falls, N. Y	Water elevators	Sept. 12, 1865.
47,330	Perrine, Robert, and Samuel W. Steuart	Rochester, N. Y	Carriages, horse	Apr. 18, 1865.
51,080	Perry, Charles A	Elkhorn, Wis	Cigar case	Nov. 21, 1865.
49,915	Perry, Edward L	New York, N. Y	Catamenial sacks	Sept. 12, 1865.
49,916	Perry, E. L., and E. D. Lazell	New York, N. Y Brooklyn, N. Y	Cork, artificial	Sept. 12, 1865.
46,932	Perry, Horatio O	Buffalo, N. Y	Engines, steam, variable cut-off valve gear for	Mar. 21, 1865.

50,840	Perry, James	Brooklyn, N. Y.	Beds, seats, &c., elastic supports for	Nov. 7, 1865.
45,743	Perry, John G	South Kingston, R. I.	Sausage fillers	Jan. 3, 1865.
45,744	Perry, John G	South Kingston, R. I.	Meat cutter	Jan. 3, 1865.
45,745	Perry, John G	South Kingston, R. I.	Stove-pipe elbow	Jan. 3, 1865.
45,746	Perry, John G	South Kingston, R. I.	Soap, machine for cutting	Jan. 3, 1865.
45,747	Perry, John G	South Kingston, R. I.	Supporters, window-sash	Jan. 3, 1865.
46,933	Perry, John G	South Kingston, R. I.	Mowing machines	Mar. 21, 1865.
46,934	Perry, John G	South Kingston, R. I	Stove-pipe elbow	Mar. 21, 1865.
49,917	Perry, Stuart	Newport, N. Y	Saw-mills	Sept. 12, 1865.
46,935	Perry, William H., and Wallace Woodworth	Los Angelos, Cal	Washing machine	Mar. 21, 1865.
46,136	Petersen, Louis	Baltimore, Md	Billiard tables, mode of fastening pockets to	Jan. 31, 1865.
46,936	Peterson, George K	San Francisco, Cal	Quartz crushers	Mar. 21, 1865.
46,696	Peterson, Jacob	Canoga, N. Y	Arms, artificial	Mar. 7, 1865.
47,978	Peterson, Robert E., jr	Philadelphia, Pa	Sewing machines, glass presser feet of	May 30, 1865.
48,203	Petrie, Henry	Chicago, Ill	Hydrometers	June 13, 1865.
46,306	Petrie, John, jr., and Samuel Taylor, deceased, by Mark Kershaw and J. Kenworthy, administrators, assignors to Thomas Clegg. Petroleum Vapor Stove and Gas-light Company. (*See* Stratton, James, assignor.)	England	Wool, machines for washing. (Patented in England July 8, 1853.)	Feb. 7, 1865.
48,774	Pettegrew, David L., assignor to Sylvester Davis and Jacob Smith	Claremont, N. H	Fence	July 11, 1865.
50,949	Pettingill, G. D., and L. H. Mericle	Cortland, N. Y	Wells, mode of sinking and tubing	Nov. 14, 1865.
50,623	Pevy, Abiel	Lowell, Mass	Furnace, cupola	Oct. 24, 1865.
49,149	Pfeifer, A. F	Newark, N. J	Lock for pianos	Aug. 1, 1865.
51,661	Pfeiffer, Frank, assignor to Charles S. Palmer	Giesboro', D. C	Link, adjustable	Dec. 19, 1865.
46,137	Pfiel, John C	Arenzville, Ill	Ploughs, gang	Jan. 31, 1865.
46,586	Pfleghar, Frank P., and William Shöllhorn	New Haven, Conn	Oil cups, tip for	Feb. 28, 1865.
2,008	Pfleghar, Frank P., and William Shöllhorn	New Haven, Conn	Nuts, machine for finishing (Reissue)	June 20, 1865.
47,364	Phelps, Benjamin C., assignor to self and Frederick H. Williams	Weathersfield, Conn	Fruit picker	Apr. 18, 1865.
47,448	Phelps, C. C	Janesville, Wis	Chimney	Apr. 25, 1865.
50,207	Phelps, C. C., assignor to George C. Campbell	Janesville, Wis	Washing machine	Sept. 26, 1865.
47,126	Phelps, O. C	New York, N. Y	Feed wheels for ratchets and pawls	Apr. 4, 1865.
47,036	Phelps, S. B., and C. A. Slack	Norwich, Vt	Hoisting machines	Mar. 28, 1865.
47,748	Phelps, Walter S	Columbus, Ohio	Engines, steam	May 16, 1865.
48,586	Phelps, William R	New York, N. Y	Car seats, railroad, head rest for	July 4, 1865.
47,904	Phifer, Edward, assignor to self and James M. Grover	Trenton, N. J	Cultivators	May 23, 1865.
50,272	Philbrock, Alfred S	Claremont, N. H	Scythe snaths, machines for bending	Oct. 3, 1865.
2,096	Philip, William H.	Brooklyn, N. Y	Lincoln, Abraham, bust of (Design)	June 13, 1865.
47,979	Phillips, C. E	Abington, Mass	Rolling pin	May 30, 1865.
45,936	Phillips, Dewey	Shaftsbury, Vt	Buildings, laths for	Jan. 17, 1865.
47,219	Phillips, Edward J	Prescott, Wis	Churns	Apr. 11, 1865.
47,604	Phillips, Ezekiel, assignor to self and Daniel B. Pond	Blackstone, Mass	Flax, &c., machines for cleansing, dressing, and cutting	May 2, 1865.
50,028	Phillips, Hugh M	Indianapolis, Ind	Bolt machine	Sept. 19, 1865.
50,156	Phillips, Job	Pawtucket, R. I	Looms, let-off for	Sept 26, 1865.
48,587	Phillips, John Edward	Philadelphia, Pa	Broom or brush head	July 4, 1865.
47,037	Phillips, John W	Randolph Centre, Wis	Presses, wool	Mar. 28, 1865.
50,383	Pickard, D. L	Rochester, N. Y	Blacking, water-proof	Oct. 10, 1865.
	Pickering, Aquila H. (*See* Watters, Mary P., adm'x, &c., assignor.)			
	Pickering, Barton, and Sidney Maltby. (*See* Maltby & Pickering.)			
50,624	Pickering, Thomas R	New York, N. Y	Engines, steam, governors for	Oct. 24, 1865.
47,127	Pickett, Rufus S	New Haven, Conn	Fire-arms, percussion cap-holder for	Apr. 4, 1865.
1,897	Pierce, Bradford S., and Mason, R	New Bedford, Mass. New York, N. Y.	Pipes, drain, machines for making (Reissue)	Feb. 28, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Pierce, C. and J. R. (*See* Jellison, John H., assignor.)			
47,449	Pierce, Charles L	Buffalo, N. Y	Sawing machines, shingle	Apr. 25, 1865.
49,548	Pierce, Ebenezer	Hallowell, Me	Lance, bomb, for killing whales	Aug. 22, 1865.
50,625	Pierce, G. W	Holley, N. Y	Barrel machinery	Oct. 24, 1865.
	Pierce, S. B. and P. (*See* Ashdown & Galpin, assignors.)			
50,314	Piggott, William Peter	England	Telegraph cables	Oct. 3, 1865.
46,262	Pike, James L	Lynn, Mass	Horseshoe calks	Feb. 7, 1865.
46,494	Pike, Mary	Cornish, N. H	Eye water	Feb. 21, 1865.
49,436	Pike, Mason	North Leverett, Mass	Washing machine	Aug. 15, 1865.
51,081	Pike, William G	Philadelphia, Pa	Cut-offs, variable	Nov. 21, 1865.
50,731	Pimbott, William	Syracuse, N. Y	Screw cutting dies, stocks for holding	Oct. 31, 1865.
51,083	Pincus, E., and D. B. Emerick	Philadelphia, Pa	Pots, coffee	Nov. 21, 1865.
1,922	Pingree, S. W	Lawrence, Mass	Bark, tan, process for extracting (Reissue)	Mar. 28, 1865.
50,626	Pingree, S. W	Lawrence, Mass	Extracts from tan bark, apparatus for making	Oct. 24, 1865.
51,391	Piper, Edwin S., assignor to Josiah Howe and Henry M. Jacobs	Springfield, Mass	Cartridge retractor for breech-loading fire-arms	Dec. 5, 1865.
	Piper, John L., and Jacob H. Linville. (*See* Linville & Piper.)			
	Pitman, George W., and Edwin Lockwood. (*See* Lockwood & Pitman.)			
50,384	Pixley, Elbridge S	Great Barrington, Mass	Composition for filling the pores of wood, &c	Oct. 10, 1865.
	Place, Charles. (*See* Jones, Gilbert D., assignor.)			
	Place, Charles T. (*See* Young, Solomon W., assignor.)			
46,820	Planer, Louis	New York, N. Y	Tobacco, machine for cutting	Mar. 14, 1865.
47,171	Planer, Louis	New York, N. Y	Sewing machines, braiding guides for	Apr. 4, 1865.
48,204	Planer, Louis	New York, N. Y	Sewing machines	June 13, 1865.
48,205	Planer, Louis	New York, N. Y	Sewing machines, feed wheels for	June 13, 1865.
48,206	Planer, Louis	New York, N. Y	Sewing machines, feed wheels for	June 13, 1865.
50,157	Planer, Louis	New York, N. Y	Sewing machines	Sept. 26, 1865.
47,450	Plass, John T	New York, N. Y	Bread cutter	Apr. 25, 1865.
46,023	Plass, Reuben H	New York, N. Y	Fire-arms, revolving	Jan. 24, 1865.
45,937	Platt, Anson H	Yellow Springs, Ohio	Floor covering	Jan. 17, 1865.
46,138	Platt, Anson H	Yellow Springs, Ohio	Lamp burners	Jan. 31, 1865.
47,451	Platt, Anson H	Yellow Springs, Ohio	Lamps, coal oil	Apr. 25, 1865.
49,150	Platt, Burn, and Norman	Pana, Ill. and St. Louis, Mo	Planters, cotton seed	Aug. 1, 1865.
46,937	Platt, Norman	St. Louis, Mo	Ploughs	Mar. 21, 1865.
48,998	Platt, Ralph	Florence, Ind	Tuyeres, forge	July 25, 1865.
46,139	Platt, William, and A. G. Burnham	Greenfield, Pa	Hay loader	Jan. 31, 1865.
50,841	Plotts, I. N	New York, N. Y	Belt clasps	Nov. 7, 1865.
	Plume, David L. (*See* Campbell, A. D., assignor.)			
45,748	Plumer, John C	Portland, Me	Boot and shoe lasts	Jan. 3, 1865.
46,697	Plumer, J. C	Boston, Mass	Doors, spring catch for	Mar. 7, 1865.
49,786	Plumer, J. C	Boston, Mass	Springs	Sept. 5, 1865.
51,620	Plumer, J. C	Boston, Mass	Carriage wheels, felloe clamp and spoke support for	Dec. 19, 1865.
48,307	Plumstead, J. Harden	Lynn, Mass	Halter clasp	June 20, 1865.
48,588	Poh, Louis	Buffalo, N. Y	Faucets, beer	July 4, 1865.

2,061	Polhamus, John	New York, N. Y	Spoon and fork handle (Design)	May 9, 1865.
2,212	Polhamus, John	New York, N. Y	Fork or spoon handle (Design)	Oct. 31, 1865.
48,589	Pollak, Joseph	Chicago, Ill	Printing checks, machine for	July 4, 1865.
46,698	Pollock, William B	Youngstown, Ohio	Pipes, hot-blast	Mar. 7, 1865.
49,650	Polyblank, William	Cleveland, Ohio	Strainer and spout, combined	Aug. 29, 1865.
48,999	Pomeroy, J. V	Utica, N. Y	Ore crushers	July 25, 1865.
49,000	Pomeroy, W. R	Millersburg, Ohio	Keyholes, guide to	July 25, 1865.
49,479	Pomeroy, William W., assignor to self and J. W. Willard	East Hampton, Mass	Looms, let-off for	Aug. 15, 1865.
	Pomroy, Daniel. (*See* Ramsey, Nathan R., assignor.)			
47,245	Pond, Alvin, assignor to F. H. Lamson and W. W. Woodruff	Hamden, Conn	Bolts, carriage	Apr. 11, 1865.
	Pond, Daniel B. (*See* Phillips, Ezekiel, assignor.)			
50,491	Pond, Erasmus Allington	Rutland, Vt	Air, apparatus for carburetting	Oct. 17, 1865.
50,385	Pond, E. A	Rutland, Vt	Gas, illuminating, manufacture of	Oct. 10, 1865.
50,029	Pond, E. A., and M. S. Richardson	Rutland, Vt	Air, apparatus for carburetting	Sept. 19, 1865.
50,492	Pond, E. A., and M. S. Richardson	Rutland, Vt	Umbrellas, &c., inserting glass in	Oct. 17, 1865.
50,950	Pond, Julius R	New Hartford, Conn	Milk, condensing	Nov. 14, 1865.
51,749	Pond, Julius R	New Hartford, Conn	Milk, condensing	Dec. 26, 1865.
	Pond, Lucius W. (*See* Vickers, John H., assignor.)			
49,001	Pond, Moses	Boston, Mass	Ranges, cooking	July 25, 1865.
48,590	Pond, O. M	Independence, Iowa	Seeding machine and cultivator combined	July 4, 1865.
50,158	Pool, Charles, and Moses Eddy	Blissfield, Mich	Mills, cider	Sept. 26, 1865.
47,499	Poole, Robert, assignor to self and German H. Hunt	Baltimore, Md	Heaters, feed water	Apr. 25, 1865.
49,352	Poole, Robert, assignor to self and German H. Hunt	Baltimore, Md	Oil cups	Aug. 8, 1865.
45,856	Poore, Townsend	Scranton, Pa	Steam generators, water gauges for	Jan. 10, 1865.
	Porter & Brooks. (*See* Fallows, James, assignor.)			
	Porter & Brooks. (*See* Fallows, James, assignor.)			
	Porter & Brooks. (*See* Booth, George, assignor.)			
47,452	Porter, Alexander F	Philadelphia, Pa	Pumps	Apr. 25, 1865.
50,774	Porter, A. F., assignor to self and G. O. Evans	Philadelphia, Pa	Boilers, steam, preventing incrustation of	Oct. 31, 1865.
50,951	Porter, D'Arcy	Cleveland, Ohio	Knife sharpener	Nov. 14, 1865.
1,892	Porter, D'Arcy, assignor to self and K. Smith	Cleveland, Ohio	Straw cutters (Reissue)	Feb. 28, 1865.
	Porter, D'Arcy, and B. Demming. (*See* Demming & Porter.)			
51,476	Porter, E. N	Morrisville, Vt	Hinge	Dec. 12, 1865.
	Porter, Moses, and William Rhodes. (*See* Rhodes & Porter.)			
50,305	Porter, Roger W., and Jacob F. Spalding, assignors to Roger W. Porter	Nashua, N. H Hudson, N. H	Gardening implement	Oct. 3, 1865.
45,749	Porter, Rufus	Malden, Mass	Blowers, fan. (Antedated June 23, 1864)	Jan. 3, 1865.
48,433	Porter, W. B	Farmer City, Mo	Drills, seed	June 27, 1865.
49,297	Post, Jacob	Newark, N. J	Locks	Aug. 8, 1865.
49,298	Post, Jacob	Newark, N. J	Locks	Aug. 8, 1865.
50,386	Post, Nathan	Cleveland, Ohio	Buckle	Oct. 10, 1865.
	Potter, Charles, jr. (*See* Wilcox, Stephen, jr., assignor.)			
51,619	Potter, Elisha O	Pawtucket, R. I	Shaft-coupling or clutch pulley	Dec. 19, 1865.
50,952	Potter, Isaac R	Dartmouth, Mass	Horseshoe calks	Nov. 14, 1865.
48,591	Potter, Nathaniel	East Hamburg, N. Y	Scraping roads and cleaning gutters, machine for	July 4, 1865.
47,331	Potter, Nathaniel F	Providence, R. I	Peat, machine for tempering and preparing	Apr. 18, 1865.
47,564	Potter, Nathaniel F	Providence, R. I	Fuel, apparatus for preparing peat for	May 2, 1865.
46,699	Potter, R. W	New York, N. Y	Picture card frame	Mar. 7, 1865.
48,717	Potter, Stephen A	Philadelphia, Pa	Pen distributor	July 11, 1865.
51,082	Potter, William, and A. W. Sheldon	Lowell, Mass	Warps, machine for dressing and beaming	Nov. 21, 1865.
46,495	Potter, William L	Clifton Park, N. Y	Roofing composition	Feb. 21, 1865.
46,700	Potts, Robert B	Camden, N. J	Guano, Nevassa, process for treating	Mar. 7, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,332	Potts, T. J., and P. C. Yost	Hamilton, Ill	Cultivator	Apr. 18, 1865.
50,159	Poulson, John, jr	Pittstown, N. J	Harvester rakes	Sept. 26, 1865.
	Poultney, Thomas. (*See* Sneider, Charles E., assignor.)			
	Poultney, Thomas. (*See* Sneider, Charles E., assignor.)			
	Poultney, Thomas. (*See* Maegill, Oliver P., assignor.)			
47,565	Powell, James	Cincinnati, Ohio	Cocks, globe	May 2, 1865.
2,097	Powell, James	Cincinnati, Ohio	Lincoln, Abraham, medallion head of (Design)	June 13, 1865.
51,349	Powell, James	Cincinnati, Ohio	Cocks	Dec. 5, 1865.
50,030	Powell, Thomas	Richland, Ind	Boots, gaiter	Sept. 19, 1865.
	Powell, Thos. M., and Jos. G. Whittier. (*See* Whittier & Powell.)			
49,002	Powell, Van Rensselaer	Troy, N. Y	Matches, friction, manufacture of	July 25, 1865.
49,549	Powell, Van Rensselaer	Troy, N. Y	Matches, friction, manufacture of	Aug. 22, 1865.
49,299	Power, John	Boston, Mass	Cork, machines for slicing	Aug. 8, 1865.
2,030	Power, J., and A. J. Bailey, assignors to Peter Holmes	Charlestown, Mass	Corks, machines for cutting (Reissue)	July 18, 1865.
2,167	Powers, Albert E	Lansingburg, N. Y	Cloths, oil (Design)	Sept. 12, 1865.
2,193	Powers, Albert E	Lansingburg, N. Y	Floor oil-cloth (Design)	Oct. 10, 1865.
	Powers, D. A. E. and N. B. (*See* Paterson, Jas., assignor.) Design.			
48,434	Powers, Thomas H	Milwaukie, Wis	Broom head	June 27, 1865.
47,246	Powers, Timothy J., assignor to J. P. Fitch and J. R. Van Vechten	New York, N. Y	Cartridge, metallic, machine	Apr. 11, 1865.
50,536	Powers, Timothy J., assignor to J. P. Fitch, E. C. Chamberlain, and J. R. Van Veehten.	New York, N. Y	Cartridges, metallic	Oct. 17, 1865.
2,041	Pragneil, George Q	New York, N. Y	Show-cases (Design)	Apr. 4, 1865.
46,384	Pratt, Daniel L	Bridgeport, Ohio	Iron, sheet, manufacture of	Feb. 14, 1865.
51,265	Pratt, Daniel R., assignor to J. Marcus Rice	Worcester, Mass	Spike	Nov. 28, 1865.
46,140	Pratt, E. L	Boston, Mass	Gun scrapers, adjustable	Jan. 31, 1865.
47,260	Pratt, E. L	Boston, Mass	Gun barrels, scraper for cleaning	Apr. 11, 1865.
50,160	Pratt, E. L	Boston, Mass	Sifter, flour	Sept. 26, 1865.
	Pratt, F. J., *et al.* (*See* Warner, H. W., assignor.)			
48,876	Pratt, George W., assignor to self and William P. Martin	Salem, Mass	Leather, mode for embossing	July 18, 1865.
50,953	Pratt, Henry S	Hartford, Conn	Coal-scuttles	Nov. 14, 1865.
46,974	Pratt, Ira C., assignor to J. M. Campbell, D. Mooberry, E. Emerson, and H. Reeves.	Morton, Ill	Plough, gang, sulky	Mar. 21, 1865.
49,833	Pratt, Ira C., assignor to self and L. F. Pratt	Morton, Ill	Ploughs, gang	Sept. 5, 1865.
	Pratt, James T. and Horace A. (*See* Colburn, G. F. J., assignor.)			
	Pratt, James T. and Horace A. (*See* Colburn, G. F. J., assignor.) Reissue.			
1,893	Pratt, Randal	Marple Township, Pa	Rakes, hay, horse (Division 1 of reissue)	Feb. 28, 1865.
1,894	Pratt, Randal	Marple Township, Pa	Rakes, hay, horse (Division 2 of reissue)	Feb. 28, 1865.
1,895	Pratt, Randal	Marple Township, Pa	Rakes, hay, horse (Division 3 of reissue)	Feb. 28, 1865.
50,161	Pratt, T. Willis	Boston, Mass	Boilers, steam	Sept. 26, 1865.
50,387	Pratt, T. Willis	Boston, Mass	Coal traps, safety	Oct. 10, 1865.
	Pratt, Ulysses	Deep River, Conn	Ivory, process of bleaching (Extension)	July 4, 1865.
	Preble, E. C. (*See* Scoville, H. H., jr.)			
50,493	Prenatt, Augustus	Elizabeth, N. J	Lampblack, manufacture of	Oct. 17, 1865.
47,855	Prentice, Solomon M	Southington, Ohio	Seeding machine	May 23, 1865.

51,392	Prentiss, C. H., assignor to self and A. Van Norman	Detroit, Mich	Boiler, steam, feeders	Dec. 5, 1865.
48,435	Prentiss, Elijah F., and Robert A. Robertson	Philadelphia, Pa	Petroleum, apparatus for distilling	June 27, 1865.
48,436	Prentiss, Elijah F., and Robert A. Robertson	Philadelphia, Pa	Whiskey, apparatus for distilling and rectifying	June 27, 1865.
49,151	Prentiss, Elijah F., and Robert A. Robertson	Philadelphia, Pa	Mashing, boiling, and fermenting grain, apparatus for	Aug. 1, 1865.
51,211	Prentiss, Josiah W	Pultney, N. Y	Harvesters	Nov. 28, 1865.
	Prescott and Burnell *et al.* (*See* Randolph, M., assignor.)			
46,024	Prescott, Peter	Boonville, N. Y	Varnish, &c., composition for	Jan. 24, 1865.
49,918	Presser, Fred	Philadelphia, Pa	Steam radiators, valves for	Sept. 12, 1865.
47,980	Prest, Daniel	Marlborough, N. J	Rakes, horse	May 30, 1865.
50,842	Preston, Almon J	Dryden, N. Y	Hame fastener	Nov. 7, 1865.
47,856	Preston, Clarissa	Detroit, Mich	Corsets	May 23, 1865.
45,857	Preuss, Henry	New York, N. Y	Barrels, &c., for containing petroleum, composition for lining	Jan. 10, 1865.
	Prevost, Eugene M. (*See* Tyler, Henry B., assignor.)			
48,308	Price, Amos W	Adrian, Mich	Mosquito bar or tent	June 20, 1865.
	Price, Daniel. (*See* Nichols, William W., assignor.)			
	Price, E., *et al.* (*See* Buckwater, Henry L., assignor.)			
51,212	Price, Jacob, jr	Petaluma, Cal	Crushing and baling machines	Nov. 28, 1865.
50,662	Price, James, assignor to John W. and Stephen S. Tompkins, executors of James Tompkins, deceased, and John W. Tompkins.	Edgefield district, S. C	Tanning	Oct. 24, 1865.
	Price, James A., and George Bunch. (*See* Bunch & Price.)			
49,152	Price, Robert	Jersey City, N. J	Barrels, petroleum, composition for lining	Aug. 1, 1865.
50,162	Price, Thomas J	Macomb, Ill	Washing machine	Sept. 26, 1865.
45,938	Price, William	Cincinnati, Ohio	Mangle	Jan. 17, 1865.
46,701	Price, William	Cincinnati, Ohio	Washing and cleansing clothes, &c., machine for	Mar. 7, 1865.
50,079	Priest, David H., assignor to self and B. S. Harrington	Watertown, Mass	Leather holder	Sept. 19, 1865.
51,213	Prindle, Franklin B	New Haven, Conn	Fire-arms, breech-loading	Nov. 28, 1865.
	Proctor, John S. (*See* Shattuck, Job, assignor.)			
45,750	Prosser, T. T Prosser, Mason C., and Keyes A. Darling	Chicago, Ill Chicago, Ill Fond du Lac, Wis	Ploughs, gang, cultivator	Jan. 3, 1865.
46,856	Proust, Pierre E	France	Lubricating machinery, method of	Mar. 14, 1865.
46,307	Prusmann, August, assignor to B. Schaffer and C. Budenberg	Hanover	Spark arresters	Feb. 7, 1865.
46,308	Prusmann, August, assignor to B. Schaffer and C. Budenberg	Hanover	Spark arresters	Feb. 7, 1865.
48,437	Puetz, Peter J	Milwaukie, Wis	Melodeons	June 27, 1865.
46,938	Puffer, A. D	Somerville, Mass	Sirup valve	Mar. 21, 1865.
46,939	Puffer, A. D	Somerville, Mass	Grate bars	Mar. 21, 1865.
45,751	Pullinger, George B	Germantown, Pa	Meat and vegetable slicer	Jan. 3, 1865.
	Pullman, George M., and Ben Field. (*See* Field & Pullman.)			
51,750	Pulse, Hiram	St. Paul, Ind	Harrow, adjustable	Dec. 26, 1865.
	Pulte, Joseph H., *et al.* (*See* Groneweg, Pulte, and Jones.)			
50,954	Purcell, Noah H	Avon, N. Y	Planters, grain	Nov. 14, 1865.
46,385	Purchase, Thomas E	Reading, Pa	Hook, retaining and releasing	Feb. 14, 5865.
2,052	Purdy, Helen P. W	Cambridge, Mass	Alto-relievo, composition in (Design)	Apr. 11, 1865.
46,496	Purdy, W. B	Huntingdon, Pa	Timepieces, universal	Feb. 21, 1865.
	Purinton, James, jr. (*See* McKay, Gordon, assignor.)			
	Pusey, J. G., and G. W. Hughes. (*See* Hughes & Pusey.)			
	Pusey, J. G., and Charles Jackson. (*See* Jackson & Pusey.)			
46,940	Putnam, A., jr	Chester, Vt	Tobacco hooks	Mar. 21, 1865.
50,031	Putnam, E. A	Oakfield, Wis	Plough, snow	Sept. 19, 1865.
	Putnam Machine Company. (*See* Foster, Samuel C., assignor.)			
47,038	Putnam, S. S	Dorchester, Mass	Washing machine	Mar. 28, 1865.
48,718	Putnam, S. S	Dorchester, Mass	Washing machine	July 11, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Putnam, S. S	Dorchester, Mass	Curtain fixtures, window (Extension)	Mar. 28, 1865.
47,070	Putnam, S. S., and Lucius H. Dwelley, ass'rs to S. S. Putnam & Co.	Dorchester, Mass	Horseshoes, machine for making nails for	Mar. 28, 1865.
46,386	Pye, Thomas	New Hartford, N. Y	Spinning machines	Feb. 14, 1865.
50,732	Pyle, Isaac N	Decatur, Ind	Cake cutter and rolling-pin	Oct. 31, 1865.
51,266	Quam, William, and William T. Smith, assignors to selves, A. R. Wetmore, and C. C. Lathrop.	Philadelphia, Pa	Furnace, melting and smelting	Nov. 28, 1865.
51,214	Quant, Frank	Painesville, Ohio	Baling cotton, hoop lock for	Nov. 28, 1865.
51,084	Quick, Thomas H	New York, N. Y	Desiccating eggs, &c	Nov. 21, 1865.
49,153	Quimby, David S	Brooklyn, N. Y	Stoves, coal	Aug. 1, 1865.
50,733	Quimby, L. V., and William W. Marston	Boston, Mass / West Fairfax, Va	Fastening, blind	Oct. 31, 1865.
51,120	Quinby, Ira B., assignor to self and Edward Low	East Boston, Mass	Fish decoy	Nov. 21, 1865.
47,566	Quinby, J. L	Pleasant Grove, Pa	Stone gatherer. (Antedated April 26, 1865).	May 2, 1865.
	Quincy, George H., *et al.* (*See* Shinn, John, assignor.)			
	Quincy, George H., and George S. Harwood. (*See* Hussey, John W., assignor.)			
47,220	Quinn, William	Philadelphia, Pa	Velocipedes	Apr. 11, 1865.
	Quinnipiac Company. (*See* Hall, William D., assignor.)			
46,497	Race, Washburn	Lockport, N. Y	Skates	Feb. 21, 1865.
46,263	Radbourne, William	Rahway, N. J	Mangle	Feb. 7, 1865.
48,207	Raddin, John	Lynn, Mass	Carriage wheels	June 13, 1865.
	Radican, John, and Henry Heitman. (*See* Heitman & Radican.)			
49,919	Rafael, R	New York, N. Y	Boiler feeders, automatic	Sept. 12, 1865.
48,092	Rahmer, Charles L	Brooklyn, N. Y	Hats	June 6, 1865.
	Raht, Charles. (*See* Seymour, Edward L., assignor.)			
51,215	Rainey, Samuel	New Orleans, La	Chair, nursery	Nov. 28, 1865.
	Ralph, J., *et al.* (*See* Gladding, Henry C., assignor.)			
48,977	Ralston, Andrew	Carlisle, Pa	Gate, flood	July 25, 1865.
50,782	Ralya, John I	Alleghany, Pa	Staves, cutting	Oct. 31, 1865.
48,438	Ramdohr, John	Virginia City, Nevada	Metals, process for refining	June 27, 1865.
49,058	Ramsbottom, John	England	Hammering metal, machinery for	July 25, 1865.
46,388	Ramsey, George M	New York, N. Y	Railroad rail joint	Feb. 14, 1865.
49,300	Ramsey, George M	New York, N. Y	Boat, torpedo	Aug. 8, 1865.
48,491	Ramsey, Nathan R., assignor to Daniel Pomroy	Orange, Mass	Damper	June 27, 1865.
46,498	Ramsey, Robert	New Wilmington, Pa	Bag holders	Feb. 21, 1865.
51,477	Rand, A. C	Union Mills, Pa	Weather prophets	Dec. 12, 1865.
48,719	Rand, W. J	Brooklyn, N. Y	Extracts, vegetable, desiccated, preparation of	July 11, 1865.
48,492	Rand, W. J., assignor to the New York Desiccating Company	Brooklyn, N. Y	Desiccating kilns	June 27, 1865.
51,478	Rand, W. T. and L. H	Manchester, N. H	Saws, circular, centring	Dec. 12, 1865.
50,775	Randall, Daniel B., assignor to self and Samuel W. Russell	Augusta, Maine	Fastener, blind	Oct. 31, 1865.
48,208	Randall, George E	Yaphank, N. Y	Bags, holding and filling. (Antedated June 6, 1865)	June 13, 1865.
49,550	Randall, Joshua	Grand Rapids, Mich	Churn and butter-worker combined	Aug. 22, 1865.
47,857	Randall, O. E	Lewiston, Maine	Rakes, horse	May 23, 1865.
	Randall, Phineas M., and Zenas Wheeler. (*See* Wheeler & Randall.)			

47,858	Randall, S. G.	New York, N. Y.	Cars, railroad, mode of propelling	May 23, 1865.
	Randel, G. H., *et al.* (*See* Oliver, William G., assignor.)			
50,388	Randle, John M	Brighton, Ill.	Harvester rakes	Oct. 10, 1865.
48,028	Randolph, M., ass'r to self, J. Paddock, and Prescott & Bunnell	St. Louis, Mo.	Stave cutting machine. (Antedated May 26, 1865)	May 30, 1865.
47,128	Rank, Amos	Salem, Ohio	Harvesters	Apr. 4, 1865.
51,216	Rankin, Andrew	New York, N. Y.	Composition, deodorizing	Nov. 28, 1865.
47,453	Rankin, James	Detroit, Mich	Valves, slide, balanced	Apr. 25, 1865.
47,129	Rankin, John	New York, N. Y.	Churn	Apr. 4, 1865.
50,955	Ransom, Ezra	Flint, Mich.	Chair seats, machines for making	Nov. 14, 1865.
48,720	Ransom, Franklin	Buffalo, N. Y.	Pumps	July 11, 1865.
49,301	Ransom, Franklin	Buffalo, N. Y.	Pumps, air	Aug. 8, 1865.
49,787	Ransom, Louis	Lansingburg, N. Y.	Air, compressed, reservoirs for	Sept. 5, 1865.
49,920	Ransom, L. E.	Trenton, Mich	Washing machine	Sept. 12, 1865.
50,315	Ransome, Frederick	England	Stone, artificial, manufacture of. (Patented in England April 9, 1861.)	Oct. 3, 1865.
50,316	Ransome, Frederick	England	Stone, artificial, manufacture of. (Patented in England February 24, 1861.)	Oct. 3, 1865.
2,034	Rathbone, Lewis	Albany, N. Y.	Stove, cooks', plates of a (Design)	Feb. 28, 1865.
2,035	Rathbone, Lewis	Albany, N. Y.	Stove, cooks', plates of a (Design)	Feb. 28, 1865.
47,567	Rathbone, Lewis, and William Hailes	Albany, N. Y.	Stove, cooking	May 2, 1865.
51,085	Rathbone, Lewis, and William Hailes	Albany, N. Y.	Stoves, coal	Nov. 21, 1865.
46,264	Rathburn, A. C. G., and A. M. Comstock	Lyme, Ct.	Belt coupling	Feb. 7, 1865.
46,387	Rauch, Peter	South Lebanon, Pa.	Tobacco, mode of curing	Feb. 14, 1865.
	Rawson, D. W., *et al.* (*See* Colby, Daniel C., assignor.)			
48,239	Ray, George W., assignor to Ray & Taylor	Springfield, Mass.	Collars and cuffs, water-proof	June 13, 1865.
	Ray, G. W., *et al.* (*See* Hutchinson, S. B., assignor.)			
	Ray, G. W., and V. N. Taylor. (*See* Hook, A. H., ass'r.) Reissue.			
	Ray, G. W., and V. N. Taylor. (*See* Hook, A. H., ass'r.) Reissue.			
2,104	Ray, James S.	East Haddam, Conn.	Coffin handle (Design)	June 27, 1865.
48,093	Ray, John P., assignor to self and Wesley W. Ray	Honeoye, N. Y.	Racks, sheep	June 6, 1865.
50,956	Ray, Samuel, and Eli Grant	Alliance, Ohio	Harvesters	Nov. 14, 1865.
51,350	Ray, Thomas S., and Samuel E. Cleveland	Buffalo, N. Y.	Valves, safety, spring balance	Dec. 5, 1865.
51,351	Ray, Thomas S., and Samuel E. Cleveland	Buffalo, N. Y.	Light, head, locomotive	Dec. 5, 1865.
	Ray, Thomas S., and Jonathan Mayhew. (*See* Stuber & Frank, assignors.) Reissue.			
49,788	Ray, William F.	Philadelphia, Pa.	Registers for libraries	Sept. 5, 1865.
	Raymond, Campbell & Co. (*See* Smith & Brown, ass'rs.) Design.			
51,267	Raymond, Edward A., assignor to self and Chas. Merrill & Sons	Brooklyn, N. Y.	Forging apparatus	Nov. 28, 1865.
45,858	Raymond, Fitch, and August Miller	Cleveland, Ohio	Gates, fence	Jan. 10, 1865.
48,309	Raymond, Fitch, and August Miller	Cleveland, Ohio	Gates, fence	June 20, 1865.
48,592	Raymond, Fitch, and August Miller	Cleveland, Ohio	Stoves, cook, hood for	July 4, 1865.
46,389	Raymond, J. H., and W. J. Brassington	Brooklyn, N. Y.	Nut, self-locking	Feb. 14, 1865.
50,494	Rayner, Joseph	Piqua, Ohio	Presses, lard	Oct. 17, 1865.
51,217	Read, Charles A.	Lockport, N. Y.	Drill jar	Nov. 28, 1865.
50,163	Read, Dan.	New York, N. Y.	Boots and shoes, manufacture of	Sept. 26, 1865.
48,134	Read, Dan., assignor to Amos A. Taylor	New York, N. Y.	Spinning, &c., rolls for machines for preparing fibrous material for.	June 6, 1865.
49,551	Read, Henry	Ypsilanti, Mich.	Threshing machines	Aug. 22, 1865.
51,751	Read, John B.	Tuscaloosa, Ala.	Paper, manufacture of	Dec. 26, 1865.
2,076	Read, Josiah M.	Boston, Mass.	Stoves and ranges, cook (Reissue)	Sept. 26, 1865.
2,137	Reay, George H.	New York, N. Y.	Envelopes (Design)	July 18, 1865.
2,194	Rebisso, Louis	Buffalo, N. Y.	General Grant, bust of (Design)	Oct. 10, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Reckendorfer, Joseph. (*See* Rosenthal, Joseph, assignor.) Reissue of design.			
	Redding, B. B., and Thomas Hansbrow. (*See* Hansbrow & Redding.)			
48,094	Redding, Jacob	Newcastle, Ind	Churns, mode of operating	June 6, 1865.
46,702	Redding, Jerome, and	Maplewood, Mass	Sand-paper holders	Mar. 7, 1865.
	Redding, Nathaniel W	Charlestown, Mass		
	Reddington, J., *et al.* (*See* Colby, Daniel C., assignor.)			
47,454	Redlich, Henry	Chicago, Ill	Printing press	Apr. 25, 1865.
48 439	Redlich, Henry	Chicago, Ill	Fuel, artificial	June 27, 1865.
50,495	Reed, George H	Boston, Mass	Dyes and colors, preparation and manufacture of	Oct. 17, 1865.
49,154	Reed, George P	Roxbury, Mass	Watch regulators	Aug. 1, 1865.
49,155	Reed, George P	Roxbury, Mass	Watch escapements	Aug. 1, 1865.
51,479	Reed, James H	Kent county, Del	Fruit slicer	Dec. 12, 1865.
51,519	Reed, John B., assignor to self and David R. Tyler	Warren, Mass	Welt trimmer	Dec. 12, 1865.
51,268	Reed, John C., assignor to self and Joshua T. Billard	Stamford, Ct	Window blind	Nov. 28, 1865.
47,455	Reed, John H	New Haven, Ct	Car coupling	Apr. 25, 1865.
	Reed, J. P., *et al.* (*See* Lyon, B. N., assignor.)			
47,221	Reed, Josiah T	Charlestown, Mass	Gloves, kid, dyeing	Apr. 11, 1865.
	Reed, Thomas L., and David K. Hoxsie. (*See* Hoxsie & Reed.)			
46,587	Reed, Timothy K	North Bridgewater, Mass	Bag-mouth fasteners	Feb. 28, 1865.
47,859	Reed, T. K	North Bridgewater, Mass	Boots and shoes	May 23, 1865.
48,095	Reed, W. H	Philadelphia, Pa	Buttons	June 6, 1865.
	Reel, William H. (*See* McKean, H. S., assignor.)			
	Rees, James, and Henry Carter. (*See* Carter & Rees.) Extension.			
50,496	Rees, James M	Scott, Ohio	Engines, steam, governors for	Oct. 17, 1865.
47,039	Reese, Lewis	Rolling Prairie, Ind	Wind wheels	Mar. 28, 1865.
45,859	Reeve, Oliver P	Tipton, Iowa	Beehives	Jan. 10, 1865.
	Reeves, H., *et al.* (*See* Pratt, Ira C., assignor.)			
46,265	Reeves, Orrin	Greenport, N. Y	Washing machine	Feb. 7, 1865.
48,837	Reeves, Orrin	Greenport, N. Y	Washing machine	July 18, 1865.
50,627	Reeves, Tapping	Albion, Cal	Sewing machines	Oct. 24, 1865.
46,821	Regan, Bernard	Miamisburg, Ohio	Drills, grain	Mar. 14, 1865.
1,984	Regester, Joshua	Baltimore, Md	Street washers	June 6, 1865.
2,004	Regester, Joshua	Baltimore, Md	Street washers (Division 2 of reissue)	June 20, 1865.
48,721	Regester, Joshua	Baltimore, Md	Street washers (Division 1 of reissue)	July 11, 1865.
51,086	Rehfuss, George	Philadelphia, Pa	Cocks	Nov. 21, 1865.
47,905	Rehfuss, George, assignor to the American Button-hole Sewing Machine Company.	Philadelphia, Pa	Sewing machines. (Antedated November 11, 1865)	May 23. 1865.
48,440	Reichenbach, John	Pittsburg, Pa	Sewing machines	June 27, 1865.
46,141	Reichmann, Charles H	New York, N. Y	Hands, artificial substitutes for. (Antedated June 17, 1865)	Jan. 31, 1865.
49,921	Reichmann, Christian	Philadelphia, Pa	Stove, coal-oil	Sept. 12, 1865.
50,081	Reid, Francis	England	Lamp-shades, clasps for	Sept. 19, 1865.
			Spirits during the refining of sugar, process of collecting. (Antedated June 21, 1865.)	
51,752	Reid, James	Catskill, N. Y	Fire-arms, revolving	Dec. 26, 1865.

48,978	Reid, John S	Muncie, Ind	Cars, street, mode of switching	July 25, 1865.
47,456	Reid, J. Wyatt	New York, N. Y.	Horse-power	Apr. 25, 1865.
51,218	Reid, J. Wyatt	New York, N. Y.	Pulleys, securing	Nov. 28, 1865.
	Reifsnyder, Charles, and Henry A. Webber. (*See* Webber & Reifsnyder.)			
	Reifsnyder, Charles, and Henry A. Webber. (*See* Webber & Reifsnyder.)			
	Reifsnyder, Charles, and Henry A. Webber. (*See* Webber & Reifsnyder.)			
2,099	Reilly, John	White Pigeon, Mich.	Harvesting machines (Reissue)	Oct. 31, 1865.
51,219	Reilly, John	Baltimore, Md	Tiles, machine for dressing	Nov. 28, 1865.
47,981	Reilly, William A	Cincinnati, Ohio	Lathe chuck	May 30, 1865.
2,053	Reilly, William A	Cincinnati, Ohio	Lathe chuck (Reissue)	Aug. 15, 1865.
50,843	Reiman, Henry	Brooklyn, N. Y.	Matches, friction, for lighting cigars, &c	Nov. 7, 1865.
46,975	Reinhold, C. G., assignor, through mesne assignments, to self, J. F. Sharrets, and C. Arick.	Milton, Pa	Cement, asphaltic	Mar. 21, 1865.
49,922	Relf, Isaac	Mina, N. Y.	Wells, expelling oil from the veins of	Sept. 12, 1865.
50,032	Remick, Henry	Portsmouth, N. H.	Chair and stool, barbers'	Sept. 19, 1865.
	Remington, E., and Sons. (*See* Rider, Joseph, assignor.)			
	Remington, E., and Sons. (*See* Rider, Joseph, assignor.)			
	Remington, E., and Sons. (*See* Rider, Joseph, assignor.)			
	Remington, E., and Sons. (*See* Mason, William, assignor.)			
2,169	Remington, W. T.	Bridgeport, Conn	Yoke, ox (Design)	Sept. 12, 1865.
46,941	Rennolds, William E	Chicago, Ill.	Radiators, heat, for stoves	Mar. 21, 1865.
46,703	Renshaw, Joseph	Michigan City, Ind.	Bolts, stay and other, tool for cutting off	Mar. 7, 1865.
46,822	Renshaw, Joseph	Michigan City, Ind.	Vises	Mar. 14, 1865.
51,352	Rentgen, William E	Vicksburg, Miss.	Can for preserving butter	Dec. 5, 1865.
	Resley, H., and H. H. Hartsoek. (*See* Collins, M. Grier, ass'r.)			
50,082	Revy, Julian John	England	Gun cotton, manufacture of. (Patented in England Apr. 15, 1862)	Sept. 19, 1865.
50,083	Revy, Julian John	England	Gun cotton, manufacture of. (Patented in England Nov. 3, 1863)	Sept. 19, 1865.
49,923	Rex, Rudolph	Charles City, Iowa	Traps, bird	Sept. 12, 1865.
46,025	Reynolds, Edmund D., and O. B	North Bridgewater, Mass.	Cultivator and harrow, combined	Jan. 24, 1865.
49,302	Reynolds, Edmund D., and O. B	North Bridgewater, Mass.	Seeding machine	Aug. 8, 1865.
51,220	Reynolds, E	Corunna, Mich.	Bag-holders	Nov. 28, 1865.
46,390	Reynolds, Edwin	Mansfield, Conn.	Printing press, lithographic	Feb. 14, 1865.
46,704	Reynolds, Edwin	Mansfield, Conn.	Locks, keys for	Mar. 7, 1865.
47,130	Reynolds, Edwin	Mansfield, Conn.	Boilers, steam	Apr. 4, 1865.
47,605	Reynolds, Edwin, assignor to self and Benjamin Gage	Mansfield, Conn.	Nails, machine for cutting	May 2, 1865.
47,749	Reynolds, Edwin H	Rising Sun, Ind.	Stove, foot. (Antedated May 9, 1865)	May 16, 1865.
46,705	Reynolds, Harvey A	New York, N. Y.	Velocipede, trotting or pacing horse	Mar. 7, 1865.
49,156	Reynolds, Henry C	Manchester, N. Y.	Axes, manufacture of	Aug. 1, 1865.
47,982	Reynolds, R., and C. Young	Stockport, N. Y.	Hay forks, horse	May 30, 1865.
48,029	Reynolds, R., and C. Young, assignors to R. Reynolds	Stockport, N. Y.	Hay forks, horse	May 30, 1865.
48,096	Rhoades, Albert	Pontiac, Mich.	Churns	June 6, 1865.
	Rhoads, John, and Charles H. Sollers. (*See* Sollers & Rhoads.)			
51,480	Rhodes, Richard S., and Ebenezer Whyte	Chicago, Ill.	Preserving eggs, process for	Dec. 12, 1865.
47,568	Rhodes, William, and Moses Porter	Lovington, Ill	Cultivators. (Antedated April 29, 1865)	May 2, 1865.
	Rice, Clinton, and William Archer. (*See* Archer & Rice.)			
47,983	Rice, D. E., and William Evered	Detroit, Mich.	Tube sheet cutter	May 30, 1865.
	Rice, E. T., *et al.* (*See* Fuller, Jim B., assignor.)			
	Rice, G. M., *et al.* (*See* Ingram, James D., assignor.)			
47,457	Rice, George S	New York, N. Y.	Rubber articles, hard, manufacture of	Apr. 25, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Rice, J. Marcus. (*See* Pratt, Daniel R., assignor.)			
46,823	Rice, Matthias J., and W. H. Millen	Boston, Mass	Journal box	Mar. 14, 1865.
49,591	Rice, Matthias J., and Wm. H. Millen, assignors to Matthias J. Rice	Boston, Mass	Journal box	Aug. 22, 1865.
50,734	Rice, Uriah	Cincinnati, Ohio	Sifter flour	Oct. 31, 1865.
48,441	Rice, William	Concord, Ill	Drills, wheat	June 27, 1865.
	Rich, Dwight B. (*See* Abbott, Warren N., assignor.)			
46,588	Rich, John	Conway, Mass	Spinning machines	Feb. 28, 1865.
46,143	Rich, J. F	Chatham Run, Pa	Soap, fullers', process for the manufacture of	Jan. 31, 1865.
2,053	Richard, John C	New York, N. Y	Trade mark (Design)	Apr. 11, 1865.
47,800	Richards, Charles B	Hartford, Conn	Optical instruments, adjustments for	May 23, 1865.
49,039	Richards, C. E., assignor to V. A. and V. J. Messenger	North Attleboro', Mass	Collars and bosoms, shirt	July 25, 1865.
	Richards, Charles L. (*See* Parmelee, Dubois D., assignor.)			
	Richards, Charles L. (*See* Parmelee, Dubois D., assignor.)			
47,659	Richards, C. M. and G	Harpersville, N. Y	Animal power	May 9, 1865.
	Richards, Egbert S. (*See* White, Wm. B., assignor.)			
	Richards, Eugene H. (*See* Hatfield, Chas. B., assignor.)			
46,391	Richards, John	Columbus, Ohio	Plane stocks, machines for mortising	Feb. 14, 1865.
46,392	Richards, John	Columbus, Ohio	Plane stocks, machines for mortising	Feb. 14, 1865.
	Richards, J. D., *et al.* (*See* Jones, Thomas J., assignor.)			
49,592	Richards, Stephen M., assignor to self and Thomas W. Jones	Litchfield, Ill	Fastenings, sash	Aug. 22, 1865.
47,660	Richards, T. C.	New York, N. Y	Cigarettes	May 9, 1865.
50,432	Richards, Westley	England	Fire-arms, breech-loading	Oct. 10, 1865.
47,040	Richards, William B	New York, N. Y	Glass, method of preventing the corrosion or staining of the surface of.	Mar. 28, 1865.
	Richards, W. D., *et al.* (*See* Clark, William C., assignor.)			
	Richardson, Alpha, deceased, by Hubbard Harris, administrator	Enfield, N. H	Leather-splitting machines (Extension)	Sept. 15, 1865.
2,005	Richardson, Francis B	Boston, Mass	Syringes, enema (Reissue)	June 20, 1865.
50,957	Richardson, Francis B	Boston, Mass	Syringes, enema, mould for	Nov. 14, 1865.
50,844	Richardson, G. W	Graysville, Ill	Harvesters	Nov. 7, 1865.
47,569	Richardson, Hamilton	Janesville, Wis	Buildings, apparatus for heating	May 2, 1865.
	Richardson, H., *et al.* (*See* Rugg, Datus E., assignor.)			
48,209	Richardson, H. D	Florence, Mass	Lock	June 13, 1865.
48,442	Richardson, M. A	Sherman, N. Y	Washing machine	June 27, 1865.
	Richardson, M. S., and E. A. Pond. (*See* Pond & Richardson.)			
	Richardson, M. S., and E. A. Pond. (*See* Pond & Richardson.)			
49,196	Richardson, Nathan, assignor to self and Eli F. Stacy	Gloucester, Mass	Steering apparatus	Aug. 1, 1865.
	Richardson, N. P., & Co. (*See* Stevens, Wm. W., ass'r.) Design.			
	Richardson, R. E. (*See* Gowdy & Welsh, assignors.) Reissue.			
2,221	Richardson, Samuel M	New York, N. Y	Hinges for blinds, &c., ends of (Design)	Nov. 21, 1865.
2,222	Richardson, Samuel M	New York, N. Y	Locks, cases and nosings of (Design)	Nov. 21, 1865.
2,237	Richardson, Samuel M	New York, N. Y	Hook, hasp (Design)	Dec. 26, 1865.
46,942	Richardson, Wm. E	Chicago, Ill	Meat, machine for cutting	Mar. 21, 1865.
	Richmond, Henry. (*See* Fuller, Robert P., assignor.)			
50,273	Richmond, Hiram, and Alfred Cloude	West Meriden, Conn	Latches, knob	Oct. 3, 1865.
51,221	Ricker, Charles E	Lowell, Mass	Valves, steam or water	Nov. 28, 1865.

49,303	Ricker, J. W., and T. S. Lewis	Chelsea, Mass	Corn shellers	Aug. 8, 1865.
46,266	Riddle, J. J	Cincinnati, Ohio	Lamps, vapor	Feb. 7, 1865.
50,845	Riddle, J. J	Cincinnati, Ohio	Burners, gas, vapor	Nov. 7, 1865.
51,222	Ridell, Archibald	Chicago, Ill	Lock, sash	Nov. 28, 1865.
45,797	Rider, Joseph, assignor to self and E. Remington & Sons	Newark, Ohio	Fire-arms, breech-loading	Jan. 3, 1865.
46,532	Rider, Joseph, assignor to self and E. Remington & Sons	Newark, Ohio	Fire-arms, breech-loading	Feb. 21, 1865.
51,269	Rider, Joseph, assignor to self and E. Remington & Sons	Newark, Ohio	Fire-arms, revolving	Nov. 28, 1865.
47,075	Rider, Thomas	Chili	Pumps	Mar. 28, 1865.
	Rider, Wm. E. (*See* Maucci, Antonio, assignor.)			
	Rider, Wm. E. (*See* Maucci, Antonio, assignor.)			
49,789	Ridge, Joseph, and Samuel F. Estell	Richmond, Ind	Stud, shirt-collar	Sept. 5, 1865.
	Ridout, M. T., and E. Valentine. (*See* Valentine & Ridout.)			
	Ridout, M. T., and E. Valentine. (*See* Valentine & Ridout.)			
	Ridout, M. T., and E. Valentino. (*See* Valentine & Ridout.)			
47,365	Riedel, G. Adolph	Philadelphia, Pa	Boilers, steam, low-water indicators for	Apr. 18, 1865.
50,033	Riedel, G. Adolph	Philadelphia, Pa	Feed-water apparatus. (Antedated May 11, 1865)	Sept. 19, 1865.
50,034	Riedel, G. Adolph	Philadelphia, Pa	Boiler feeders, automatic. (Antedated May 11, 1865)	Sept. 19, 1865.
50,035	Riedel, G. Adolph	Philadelphia, Pa	Boiler feeders, automatic. (Antedated July 26, 1865)	Sept. 19, 1865.
47,375	Riedel, G. Adolph, assignor to A. Merritt Asay	Philadelphia, Pa	Car springs	Apr. 18, 1865.
47,570	Ries, Clark D. W	Edwards, N. Y	Buckle, tug	May 2, 1865.
50,497	Ries, George A	Belvidere, N. J	Bolt-cutter	Oct. 17, 1865.
	Rigby, Joseph. (*See* Milburn, Benjamin T., assignor.)			
47,984	Riggs, D. C., and L. S	Omaha City, Neb	Press, sugar	May 30, 1865.
51,520	Riggs, Homer, assignor to self and William Chureh	Oxford, Conn	File, paper and letter	Dec. 12, 1865.
50,164	Riggs, Leonard C	Florence, Mass	Sewing machines, ruffling device for	Sept. 26, 1865.
49,790	Riggs, Silas	Blanchester, Ohio	Grappling apparatus, naval	Sept. 5, 1865.
	Righter, G., *et al.* (*See* Gilbert, George W., assignor.)			
50,423	Riley, J. M., assignor to self and W. A. Schmidt	Newark, N. J	Hinges	Oct. 10, 1865.
50,958	Riley, Michael	Morrow, Ohio	Malting apparatus	Nov. 14, 1865.
45,939	Rinehart, Martin	Monroe, Mich	Car coupling	Jan. 17, 1865.
49,683	Rinehart. William D., assignor to self, D. Z. Briekell, and William W. Martin.	Pittsburg, Pa	Iron for strap joints	Aug. 29, 1865.
48,838	Ring, Asa T	Newtonville, Mass	Tree protectors	July 18, 1865.
47,172	Ring, David	Damariscotta, Me	Auger, ground. (Antedated March 26, 1865)	Apr. 4, 1865.
48,979	Ring, Francis C	Portland, Me	Dough kneader	July 25, 1865.
46,943	Rino, Moritz	Williamsburg, N. Y	Vinegar, manufacture of	Mar. 21, 1865.
46,142	Riordan, Peter	Washington, D. C	Valve, safety, regulators	Jan. 31, 1865.
2,122	Ripley, Ezra	Troy, N. Y	Kettles, tea (Reissue)	Dec. 5, 1865.
46,393	Ripley, John L	Fremont, Ohio	Hay forks, horse	Feb. 14, 1865.
48,210	Ripley, John L	Fremont, Ohio	Ladder, extension	June 13, 1865.
45,752	Rippon, Wm. F., and Thomas R. Robinson	Providence, R. I	Spinning frames, self-oiling spindle bolsters for	Jan. 3, 1865.
49,651	Risley, Caleb M	Woodbury, N. J	Linch pins, securing	Aug. 29, 1865.
45,753	Ritchie, Edward S	Brookline, Mass	Compass, instruments for determining the variations of the	Jan. 3, 1865.
48,443	Ritchie, Edward S	Brookline, Mass	Binnacles	June 27, 1865.
49,157	Ritchie, Edward S	Brookline, Mass	Compasses, azimuth	Aug. 1, 1865.
48,444	Ritter, Andrew J	Rahway, N. J	Carriage springs	June 27, 1865.
50,628	Ritter, Christian	Reading, Pa	Burners, gas	Oct. 24, 1865.
47,661	Ritter, Samuel S	Philadelphia, Pa	Studs and buttons	May 9, 1865.
49,437	Ritter, Samuel S	Philadelphia, Pa	Trusses	Aug. 15, 1865.
1,903	Ritterhoff, F. W., and C. A. Colquitt, assignors to selves and Wm. Malchahey.	New York, N. Y	Tobacco, machine for cutting (Reissue)	Mar. 14, 1865.
47,131	Ritterhoff, F. W., C. A. Colquitt, and Wm. Mulchahey	New York, N. Y	Tobacco, machine for cutting	Apr. 4, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
51,621	Rix, J. M.	Boston, Mass.	Locks, key guards for	Dec. 19, 1865.
47,334	Robbins, Elisha	Worcester, Mass.	Carriages	Apr. 18, 1865.
48,310	Robbins, Elisha	Worcester, Mass.	Carriages	June 20, 1865.
48,722	Robbins, E. T	Cincinnati, Ohio	Ventilating apparatus	July 11, 1865.
1,847	Robbins, Louis	New York, N. Y.	Barrels to contain petroleum, coal oil, &c., preparing	Jan. 3, 1865.
47,132	Robbins, Louis	New York, N. Y.	Process for preserving wood	Apr. 4, 1865.
	Robbins, Louis	New York, N. Y.	Rosin, tanners' oil from (Extension)	Oct. 30, 1865.
	Robbins, Louis	New York, N. Y.	Rosin, lubricating oil from (Extension)	Oct. 30, 1865.
	Robbins, Louis	New York, N. Y.	Rosin, distilling acid and naphtha from (Extension)	Oct. 30, 1865.
47,247	Robbins, Martin, assignor to self and Mahlon M. Wombaugh	Cincinnati, Ohio	Weighers, grain, automatic	Apr. 11, 1865.
48,877	Robbins, Richard C., assignor to J. M. and G. W. Keen	New York, N. Y.	Gauge, pressure, diaphragm	July 18, 1865.
50,629	Roberts, Andrew J	Boston, Mass	Sweeping machine, street	Oct. 24, 1865.
50,630	Roberts, Andrew J	Boston, Mass	Sweeping machine, street	Oct. 24, 1865.
47,071	Roberts, Andrew J., assignor to Benjamin F. Brown	Boston, Mass	Horseshoes, machines for making	Mar. 28, 1865.
2,067	Roberts, Benjamin S	United States Army	Fire-arms, breech-loading (Reissue)	Sept. 5, 1865.
2,068	Roberts, Benjamin S	United States Army	Fire-arms, breech-loading (Division 2 of reissue)	Sept. 5, 1865.
45,860	Roberts, Cyrus	Three Rivers, Mich	Cultivators	Jan. 10, 1865.
45,861	Roberts, Cyrus	Three Rivers, Mich	Cultivators	Jan. 10, 1865.
48,445	Roberts, Cyrus	Three Rivers, Mich	Cultivators	June 27, 1865.
47,458	Roberts, Edward A. L	New York, N. Y.	Torpedoes in artesian wells, exploding	Apr. 25, 1865.
49,924	Roberts, Edwin, assignor to self and Henry Coy	Moorestown, N. J.	Lamps, hand, coal-oil	Sept. 12, 1865.
2,062	Roberts, Elijah, assignor through mesne assignments to A. L. Stout, Wm. M. Mills, and J. Temple.	Dayton, Ohio	Water wheels, gates for (Reissue)	Aug. 29, 1865.
46,707	Roberts, Esek. C	Salem, Mich	Preserving fruits, &c., method of	Mar. 7, 1865.
	Roberts, Geo. P., and M. O. Waggoner. (*See* Dillingham, Hiram P., assignor.)			
50,274	Roberts, James C	Adamstown, Md.	Mills, grinding	Oct. 3, 1865.
48,351	Roberts, Martyn J	Pendarren House, England.	Wool, &c., apparatus for oiling	June 20, 1865.
49,438	Roberts, Marvin S	Lewiston, N. Y.	Peat, apparatus for preparing	Aug. 15, 1865.
46,499	Roberts, Thomas	Shelby, Ohio	Stove drum	Feb. 21, 1865.
51,353	Roberts, Thomas D	Middletown, N. Y.	Wood-bending machines	Dec. 5, 1865.
2,069	Roberts, Wm. W	New York, N. Y.	Coffin (Design)	May 9, 1865.
	Robertson, D. M., *et al.* (*See* Bidwell, J. A., assignor.)			
47,861	Robertson, D. M., and J. A. Bidwell	East Boston, Mass. / Boston, Mass	Screws, wood, machine for shaving and nicking	May 23, 1865.
50,036	Robertson, John	Brooklyn, N. Y.	Lead, sheet, machine for manufacturing	Sept. 19, 1865.
	Robertson, John, and Robert W. Gardener. (*See* Gardener & Robertson.)			
	Robertson, Robert A., and Elijah F. Prentiss. (*See* Prentiss & Robertson.)			
	Robertson, Robert A., and Elijah F. Prentiss. (*See* Prentiss & Robertson.)			
	Robertson, Robert A., and Elijah F. Prentiss. (*See* Prentiss & Robertson.)			
48,629	Robeson, Robert J., assignor to self and Jared W. Mills	Chicago, Ill.	Rakes, horse	July 4, 1865.

48,316	Robinson, Alfred	New York, N. Y	Roofing material, mode of preparing	June 20, 1865.
48,723	Robinson, Benjamin	East Gloucester, Mass	Fish, apparatus for curing and drying	July 11, 1865.
	Robinson, B. W., and C. M. Clarke. (*See* Hall, A. W., assignor.)			
	Robinson, B. W., and S. P. Chapin. (*See* Hall, A. W., assignor.)			
47,222	Robinson, Charles	Springfield, Mass	Photographs, apparatus to preserve and exhibit	Apr. 11, 1865.
50,498	Robinson, Charles	Springfield, Mass	Photographic pictures, apparatus for preserving and exhibiting	Oct. 17, 1865.
45,754	Robinson, Charles H	Bath, Maine	Presses	Jan. 3, 1865.
45,863	Robinson, Charles H	Bath, Maine	Press, baling	Jan. 10, 1865.
2,105	Robinson, Charles H	Bath, Maine	Press, baling	Nov. 14, 1865.
49,652	Robinson, Eli C	Troy, N. Y	Heaters. (Antedated August 18, 1865) (Reissue)	Aug. 29, 1865.
	Robinson, Frank, and Wm. Jackson. (*See* Jackson & Robinson.)			
49,791	Robinson, F. W	Richmond, Ind	Sawing machines	Sept. 5, 1865.
2,117	Robinson, F. W	Richmond, Ind	Sawing machines (Reissue)	Nov. 28, 1865.
51,354	Robinson, James J	Clinton, Ill	Churns	Dec. 5, 1865.
47,041	Robinson, John A	Pittston, Pa	Coal screen	Mar. 28, 1865.
51,481	Robinson, Prince W	New Bedford, Mass	Steering apparatus	Dec. 12, 1865.
46,864	Robinson, Robert	New York, N. Y	Bottles, closing	Mar. 14, 1865.
47,333	Robinson, Thomas L	Boston, Mass	Oil, fish, and other impurities, apparatus for separating	Apr. 18, 1865.
	Robinson, Thomas R., and Wm. F. Rippon. (*See* Rippon & Robinson.)			
50,631	Robinson, William	Bellefontaine, Ohio	Churns	Oct. 24, 1865.
49,552	Robinson, Wm. R., assignor to self and N. E. Worthington	Brimfield, Ill	Thills, adjustable	Aug. 22, 1865.
45,862	Robison, H. C	Monmouth, Ill	Corn-shellers, device for feeding corn to	Jan. 10, 1865.
46,424	Robjohn, Thomas, assignor to E. C. Wooster	New York, N. Y	Sewing machines for making band ruffling	Feb. 14, 1865.
50,165	Roche, John A., and J. J. Stewart	Williamsburg, N. Y	Hats, apparatus for finishing	Sept. 26, 1865.
48,839	Rochow, J. F	New York, N. Y	Water, potable, apparatus	July 18, 1865.
	Rock, G., *et al.* (*See* Liebermann, Henry, assignor.)			
	Rock Drill Manufacturing and Mining Company. (*See* Howson, Henry, assignor.)			
	Rock Drill Manufacturing and Mining Company. (*See* Foster, Charles E., assignor.)			
	Rock Drill and Mining Company. (*See* Foster, Charles E., assignor.)			
	Rockwell, Baker & Hill, *et al.* (*See* Sangster, James, assignor.)			
51,482	Rockwell, Horace	Roanoke, Ind	Strippers, cane	Dec. 12, 1865.
	Rockwell, L., and A. F. Carling. (*See* Carling & Rockwell.)			
50,990	Roder, Conrad, assignor to M. Landenberger	Philadelphia, Pa	Looms for cross weaving	Nov. 14, 1865.
51,355	Rodgers, J. F	South Bend, Ind	Bolts, machines for cutting threads on	Dec. 5, 1865.
	Rodgers, L. J., *et al.* (*See* Hayes, John W., assignor.)			
48,775	Rodier, Louis C., assignor to Samuel Norris	Springfield, Mass	Fire-arms, revolving	July 11, 1865.
48,840	Rodier, Peter	Springfield, Mass	Sewing machines, clutch pulley for driving	July 18, 1865.
50,776	Roebling, John A., and John McMurtry, assignors to John McMurtry	Trenton, N. J / Lexington, Ky	Railroad chair	Oct. 31, 1865.
49,953	Roebuck, Samuel, assignor to Roebuck Brothers & Markland	New York, N. Y	Lanterns	Sept. 12, 1865.
47,335	Roesling, Charles Wm	Cleveland, Ohio	Cigars, &c., powder for lighting	Apr. 18, 1865.
50,037	Roessler, Paul	New Haven, Conn	Compasses	Sept. 19, 1865.
47,336	Roettger, Hermann	Philadelphia, Pa	Cameras, photographic, &c., achromatic object glass for	Apr. 18, 1865.
47,862	Roettger, Hermann	Philadelphia, Pa	Camera, solar	May 23, 1865.
50,038	Roffee, Christopher E	Barrington, R. I	Cigar wrapper	Sept. 19, 1865.
47,571	Rogers, Calvin B	Deep River, Conn	Dice, &c., tool for marking	May 2, 1865.
47,572	Rogers, Calvin B	Deep River, Conn	Ivory, machines for cutting	May 2, 1865.
46,425	Rogers, C. B., assignor to C. B. Rogers & Co	Norwich, Conn	Sawing machines	Feb. 14, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
45,864	Rogers, Charles D	Utica, N. Y	Gear shifting	Jan. 10, 1865.
47,863	Rogers, David B	Pittsburg, Pa	Car truck frames	May 23, 1865.
50,275	Rogers, Ephraim P	Corning, N. Y	Circles, instruments for finding centres of	Oct. 3, 1865.
50,389	Rogers, Ethan	New York, N. Y	Engines, steam, valves for	Oct. 10, 1865.
46,026	Rogers, George S	Thetford Centre, Vt	Paper, machines for drying	Jan. 24, 1865.
	Rogers, Gilbert. (*See* Hart, Wm. H., assignor.)			
46,268	Rogers, James E	Chelsea, Mass	Frames, oval, machines for jointing	Feb. 7, 1865.
2,024	Rogers, John	New York, N. Y	Group of statuary (Design)	Jan. 17, 1865.
2,062	Rogers, John	New York, N. Y	Group of figures (Design)	May 9, 1865.
2,195	Rogers, John	New York, N. Y	Group of statuary (Design)	Oct. 10, 1865.
50,276	Rogers, John	New York, N. Y	Stills for distilling petroleum	Oct. 3, 1865.
48,446	Rogers, Joseph	Nashua, N. H	Furnaces, water doors for	June 27, 1865.
2,130	Rogers, Robert E., and James Black	Philadelphia, Pa	Boilers, steam (Reissue)	Dec. 19, 1865.
45,865	Rogers, Seymour	Pittsburg, Pa	Hay wagons, &c., means for loading and unloading	Jan. 10, 1865.
46,027	Rogers, Seymour	Pittsburg, Pa	Elevator, hay	Jan. 24, 1865.
51,223	Roll, Albert	South Amboy, N. J	Car coupling, railway	Nov. 28, 1865.
47,133	Root, John B	New York, N. Y	Pumps, oil well	Apr. 4, 1865.
47,224	Root, John B	New York, N. Y	Pumps for oil wells	Apr. 11, 1865.
47,459	Root, John B	New York, N. Y	Engines, piston, vibrating	Apr. 25, 1865.
47,864	Root, John B	New York, N. Y	Propeller, screw	May 23, 1865.
51,750	Root, John B	New York, N. Y	Locomotives. (Antedated December 13, 1865)	Dec. 26, 1865.
46,267	Root, T. J	Galena, Ill	Hammer, trip	Feb. 14, 1865.
50,039	Roscoe, Henry	New York, N. Y	Steel, composition for refining and hardening	Sept. 19, 1865.
46,944	Rose, J. M	New York, N. Y	Skirts, frames for gathering	Mar. 21, 1865.
49,158	Rose, J. J	Elmwood, Ill	Iron, machine for upsetting, cutting, and punching	Aug. 1, 1865.
48,724	Rose, Timothy	Cortlandville, N. Y	Water wheels	July 11, 1865.
50,846	Rose, Timothy	Cortlandville, N. Y	Pumps for oil wells	Nov. 7, 1865.
49,792	Rosseé, William	New York, N. Y	Bullets for rifled fire-arms. (Antedated August 25, 1865)	Sept. 5, 1865.
1,933	Rosenthal, Joseph, assignor to Joseph Reckendorfer	New York, N. Y	Trade mark for lead pencils (Reissue of design)	Apr. 11, 1865.
	Ross, George, *et al.* (*See* Scanlon, James, assignor.)			
	Ross, James M. (*See* Hitchcock, Marcus T., assignor.)			
48,447	Ross, John G	Philadelphia, Pa	Shoes, jacks for holding	June 27, 1865.
48,448	Ross, John G	Philadelphia, Pa	Heel shave	June 27, 1865.
50,777	Ross, Johnston, assignor to self, A. H. Gross, and C. W. Batchelor	East Liberty, Pa	Wells, artesian, mode of operating boring tools for	Oct. 31, 1865.
49,304	Rosseter, William	Newark, N. J	Cartridge box	Aug. 8, 1865.
48,097	Rossman, Stephen	Hudson, N. Y	Horse-leg fender	June 6, 1865.
47,460	Rossman, William F	Hudson, N. Y	Coffee settlers	Apr. 25, 1865.
51,622	Roth, Frank J., and David R. Gamble	Newark, Ohio	Engine, steam, pistons	Dec. 19, 1865.
47,337	Roth, Julius Augustus	Philadelphia, Pa	Fuel, artificial	Apr. 18, 1865.
49,480	Roth, Julius A., assignor to James B. Brown	Philadelphia, Pa	Paper pulp, manufacture of	Aug. 15, 1865.
2,100	Roth, Julius A., assignor to James B. Brown	Philadelphia, Pa	Paper pulp, manufacture of (Reissue)	Nov. 7, 1865.
48,725	Rothfelder, Henry	New York, N. Y	Watches, winding and setting	July 11, 1865.
48,726	Rothfelder, Henry	New York, N. Y	Chronometer escapements	July 11, 1865.
	Rouart, S. H., and J. B. Mignon. (*See* Mignon & Rouart.)			
	Rouse, J. G. (*See* Killacky, Martin, assignor.)			

46,708	Rowan, Charles E	Brooklyn, N. Y	Rice, machine for hulling, cleaning and polishing	Mar. 7, 1865.
51,393	Rowbotham, John, assignor through mesne assignments to self and J. H. Spencer.	Philadelphia, Pa	Valves, slide, balanced	Dec. 5, 1865.
49,159	Rowe, A. H	Hartford, Conn	Fastener, sash	Aug. 1, 1865.
48,098	Rowe, Philip C	Boston, Mass	Pumps, pistons for	June 6, 1865.
46,945	Rowe, Thomas	Brooklyn, N. Y	Linseed, &c., apparatus for triturating and heating	Mar. 21, 1865.
51,623	Rowland, Charles	Clinton, Ill	Envelope and letter sheet, combination of	Dec. 19, 1865.
47,573	Rowland, Lynford	Philadelphia, Pa	Bucket ear	May 2, 1865.
48,099	Rowland, Robert	New York, N. Y	Glucose and white lead, manufacture of	June 6, 1865.
51,087	Rowland, William	Philadelphia, Pa	Steel, process of shaping and hardening articles of. (Antedated November 9, 1865.)	Nov. 21, 1865.
	Roxbury Carpet Comp'y. (*See* Pierce, Francis J., ass'r.) Design.			
	Roxbury Carpet Comp'y. (*See* Pierce, Francis J., ass'r.) Design.			
50,040	Rudgers, Charles W	Bucksville, Ohio	Fleece folders	Sept. 19, 1865.
48,980	Rudolph, Fred	New York, N. Y	Locks	July 25, 1865.
46,709	Ruff, Charles A	Providence, R. I	Knife for opening tin cans. (Antedated February 23, 1865)	Mar. 7, 1865.
46,500	Rugee, Herman	Milwaukee, Wis	Radiators, heat	Feb. 21, 1865.
47,155	Rugg, Datus E., assignor to self, F. S. Otis, J. I. and J. O. West, J. Wilcox & Co., and H. Richardson.	New York, N. Y	Skirts, skeleton, forming	Apr. 4, 1865.
49,305	Ruggles, Robert B	Hartford, Conn	Stud, shirt	Aug. 8, 1865.
47,985	Rulon, Henry M	Monmouth, Ill	Car coupling	May 30, 1865.
	Rumsey & Co. (*See* Egleston, Leonard, assignor.) Design.			
47,042	Rundell, William F	Geneva, N. Y	Hay forks	Mar. 28, 1865.
50,277	Rundell, William F	Geneva, N. Y	Horse-powers, brakes for	Oct. 3, 1865.
50,632	Rupp, Daniel and John	New York, N. Y	Photographs, machine for pressing and smoothing	Oct. 24, 1865.
	Russ, Augustus. (*See* Niles, Peter H., assignor.)			
51,483	Russ, James J	Worcester, Mass	Scissors-sharpener	Dec. 12, 1865.
50,166	Russell, Charles	Wilmington, Ohio	Chair bottom	Sept. 26, 1865.
50,735	Russell, Dwight	Milford, Mass	Inhalers, vapor	Oct. 31, 1865.
49,394	Russell, E. P	Manlius, N. Y	Harvesting machines	Feb. 14, 1865.
49,306	Russell, E. P	Manlius, N. Y	Wristpins, method of making	Aug. 8, 1865.
49,439	Russell, E. P	Manlius, N. Y	Harvesters, driving wheels of	Aug. 15, 1865.
47,338	Russell, E. P	Manlius, N. Y	Harvesters, reels for	Apr. 18, 1865.
47,662	Russell, E. P	Manlius, N. Y	Horse-powers	May 9, 1865.
50,959	Russell, E. P	Manlius, N. Y	Harvesters	Nov. 14, 1865.
	Russell, E. W., *et al.* (*See* Warner, H. W., assignor.)			
49,653	Russell, Jacob	Brooklyn, N. Y	Nut machine	Aug. 29, 1865.
	Russell, J., Manufacturing Company. (*See* Butler, Calvin L., ass'r.)			
	Russell, Samuel W. (*See* Randall, Daniel B., assignor.)			
47,339	Russell, William	Beloit, Wis	Graining instrument. (Antedated December 14, 1864)	Apr. 18, 1865.
	Russell, William, *et al.* (*See* Adams, John, assignor.)			
	Ruttan, Henry	Canada West	Furnaces, ventilating (Extension)	Jan. 21, 1865.
	Ryan, F. D., and D. H. Clock. (*See* Clock & Ryan.)			
50,390	Ryan, Joseph	St. Louis, Mo	Docks, dry	Oct. 10, 1865.
2,029	Ryan, Michael F	New York, N. Y	Badge or breastpin (Design)	Feb. 7, 1865.
50,391	Ryder, Andrew V	Germans, Ohio	Rakes, horse	Oct. 10, 1865.
48,312	Ryder, John B	Wapello, Iowa	Stalks, machines for cutting	June 20, 1865.
46,269	Soarback, Louis	Philadelphia, Pa	Tobacco pipe	Feb. 7, 1865.
48,727	Soarback, Louis	Philadelphia, Pa	Books, pocket	July 11, 1865.
49,307	Soarback, Louis	Philadelphia, Pa	Books, pocket	Aug. 18, 1865.
1,912	Sabin, H. W., assignor through mesne assignments to Charles Mason, Robert W. Fenwick, and De Witt C. Lawrence.	Washington, D. C	Rakes, horse (Reissue)	Mar. 28, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
1,913	Sabin, H. W., assignor through mesne assignments to Charles Mason, Robert W. Fenwick, and De Witt C. Lawrenee.	Washington, D. C	Rakes, horse (Division 2 of reissue)	Mar. 28, 1865.
1,914	Sabin, H. W., assignor through mesne assignments to Charles Mason, Robert W. Fenwick, and De Witt C. Lawrenee.	Washington, D. C	Rakes, horse (Division 3 of reissue)	Mar. 28, 1865.
1,915	Sabin, H. W., assignor through mesne assignments to Charles Mason, Robert W. Fenwick, and De Witt C. Lawrenee.	Washington, D. C	Rakes, horse (Division 4 of reissue)	Mar. 28, 1865.
45,801	Saez, Cosme Gareia	Spain	Fire-arms, breech-loading	Jan. 3, 1865.
49,308	Safford, Albert G	Boston, Mass	Cars, railway, sliding doors of	Aug. 8, 1865.
49,558	Safford, Edmund E., and Sylvanus Sawyer	Fitchburg, Mass	Punch, centre, adjustable	Aug. 22, 1865.
47,340	Safford, J. A	Boston, Mass	Shoestring cutter, leather	Apr. 18, 1865.
1,956	Safford, J. A	Boston, Mass	Leather-splitting machine (Reissue)	May 9, 1865.
2,123	Safford, J. A	Boston, Mass	Leather, machine for splitting (Reissue)	Dec. 5, 1865.
2,232	Sage, Oliver F	Boston, Mass	Carriage, advertising (Design)	Dec. 12, 1865.
46,589	Sage, William	Berlin, Conn	Rowlocks	Feb. 28, 1865.
1,854	Saladee, Cyrus W	Putnam, Ohio	Curryeombs (Reissue)	Jan. 24, 1865.
46,710	Saladee, Cyrus W	Putnam, Ohio	Currycombs	Mar. 7, 1865.
46,711	Saladee, Cyrus W	Putnam, Ohio	Stirrups	Mar. 7, 1865.
46,712	Saladee, Cyrus W	Putnam, Ohio	Stirrups	Mar. 7, 1865.
47,043	Saladee, Cyrus W	Putnam, Ohio	Earthenware, machine for making	Mar. 28, 1865.
47,574	Saladee, Cyrus W	Putnam, Ohio	Buckle, harness	May 2, 1865.
48,100	Saladee, Cyrus W	Newark, Ohio	Hook, snap	June 6, 1865.
49,309	Saladee, Cyrus W	Putnam, Ohio	Buckle	Aug. 8, 1865.
49,654	Saladee, Cyrus W	Newark, Ohio	Hook, snap	Aug. 29, 1865.
49,655	Saladee, Cyrus W	Newark, Ohio	Hook, snap	Aug. 29, 1865.
50,167	Saladee, Cyrus W	Newark, Ohio	Link, snap	Sept. 26, 1865.
51,088	Saladee, Cyrus W	Newark, Ohio	Link, snap	Nov. 21, 1865.
51,089	Saladee, Cyrus W	Newark, Ohio	Whiffletrees, snap hook for	Nov. 21, 1865.
47,986	Salisbury, Silas C	New York, N. Y	Gas, apparatus for the manufaeture of	May 30, 1865.
46,270	Sallee, Lucretia E	Decatur, Ill	Dolls' heads and other toys, mode of eonstrueting	Feb. 7, 1865.
48,211	Saloshinsky, Herman	New York, N. Y	Balanees, spring	June 13, 1865.
48,313	Sampson, Blaney E	Boston, Mass	Carriages, eonneeting thills to	June 20, 1865.
50,537	Sampson, Elnathan, assignor to Alfred C. Hitehcoek	Lansingburg, N. Y	Scales, platform	Oct. 17, 1865.
50,540	Sampson, Elnathan, assignor to Alfred C. Hitehcoek	Lansingburg, N. Y	Weighing grain, machines for	Oct. 17, 1865.
48,314	Sampson, George	Manchester, Maine	Cloth, oil, manufaeture of	June 20, 1865.
51,521	Samuels, James, assignor to self and George W. Otis	Lynn, Mass	Steam generators	Dec. 12, 1865.
46,028	Sanborn, Franeis G	Boston, Mass	Button-hole eutters	Jan. 24, 1865.
48,449	Sanborn, J. F	Hardwiek, Vt	Churns	June 27, 1865.
50,168	Sanborn, Rufus S	Ripon, Wis	Bed-bottom	Sept. 26, 1865.
50,900	Sanders, Thomas H. B	Pittsburg, Pa	Ventilating railroad ears, apparatus for	Nov. 14, 1865.
50,736	Sanders, Zenas	West Windsor, Vt	Stand, milk	Oct. 31, 1865.
50,084	Sanderson, Charles	England	Iron and steel, mode of making bars, shafts, and other articles eomposed of.	Sept. 19, 1865.
45,755	Sanford, Joel	Polo, Ill	Water wheels	Jan. 3, 1865.
51,090	Sanford, Levi M., and James P. Beebe	Clinton, Iowa / Morris, Ill	Pen, fountain	Nov. 21, 1865.

	Sandifer, J. M., and W. J. Weaver. (*See* Weaver and Sandifer.)			
51,356	Sanford, Benjamin F	Galesburg, Ill	Traps, animal	Dec. 5, 1865.
48,212	Sanford, Gelston	New York, N. Y	Horse-powers	June 13, 1865.
50,278	Sanford, Gelston	New York, N. Y	Pea sheller and cherry stoner	Oct. 3, 1865.
49,440	Sanford, Lockwood	New Haven, Conn	Tree protectors	Aug. 15, 1865.
48,101	Sanford, N. C	Meriden, Conn	Wheelbarrows	June 6, 1865.
51,484	Sanford, Samuel T	Fall River, Mass	Shingle machine	Dec. 12, 1865.
	Sanford, W., *et al.* (*See* Martin, Benjamin G., assignor.)			
	Sanford, W., *et al.* (*See* Martin, Benjamin G., assignor.)			
	Sanford, W., *et al.* (*See* Martin, Benjamin G., assignor.)			
	Sanford, W., *et al.* (*See* Martin, Benjamin G., assignor.)			
	Sangster, Hugh and James	Buffalo, N. Y	Lanterns (Extension)	June 8, 1865.
48,450	Sangster, Hugh and James	Buffalo, N. Y	Burners, kerosene oil	June 27, 1865,
51,357	Sangster, James	Buffalo, N. Y	Scales	Dec. 5, 1865.
48,493	Sangster, James, assignor to self, Rockwell, Baker & Hill, and E. B. Sangster.	Buffalo, N. Y	Printing presses	June 27, 1865.
48,776	Sangster, James, assignor to Harvey Ball and Wm. H. Bonnell	Buffalo, N. Y	Lubricating cups	July 11, 1865.
46,029	Santee, John C	Hughsville, Pa	Bedstead fastenings	Jan. 24, 1865.
50,169	Sargeant, Edmund K	Boonton, N. J	Coffee boiler, alarm. (Antedated September 14, 1865)	Sept. 26, 1865.
47,223	Sargeant, Henry W., jr	Boston, Mass	Clothes pin	Apr. 11, 1865.
49,441	Sargeant, Henry W., jr	Lowell, Mass	Sifter, flour	Aug. 15, 1865.
2,077	Sargeant, Joseph B	New Britain, Conn	Screws for picture frames, heads of (Reissue)	Sept. 26, 1865.
	Sargeant & Co. (*See* Neiberg, Charles L., assignor.) Design.			
48,593	Sargent, Charles G	Graniteville, Mass	Blowers, fan	July 4, 1865.
50,961	Sargent, Charles G	Graniteville, Mass	Wool-washing machines	Nov. 14, 1865.
47,461	Sargent, Daniel	New York, N. Y	Sweeping machines, street	Apr. 25, 1865.
48,451	Sargent, George W., and Plumer H. Chesley	Chelsea, Mass	Meat-chopping machine	June 27, 1865.
47,575	Sargent, James, and H. W. Covert	Rochester, N. Y	Locks	May 2, 1865.
48,452	Sargent, James B., and F. W. Towne	Fitchburg, Mass	Steam cocks	June 27, 1865.
47,341	Sargent, Joseph F	Boston, Mass	Heel-trimming machine	Apr. 18, 1865.
51,358	Sattley, Marshall	Taylorsville, Ill	Ploughs, gang	Dec. 5, 1865.
48,981	Sauccrman, Samuel	Freeport, Ill	Apple corer and slicer	July 25, 1865.
47,134	Saul, Sarah E	New York, N. Y	Churns	Apr. 4, 1865.
51,394	Saunders, Abiel F., assignor to E. Smith and B. T. Fellows	Boston, Mass	Ladder, step	Dec. 5, 1865.
50,392	Saunders, Benjamin	Nashua, N. H	Spoolers for winding yarn for beaming, &c	Oct. 10, 1865.
50,847	Saunders, Zeba, and Abiel F	Tewksbury, Mass; Boston, Mass	Sifter, flour	Nov. 7, 1865.
	Sause, E., and M. A. Espirat. (*See* Espirat and Sause.)			
51,754	Savage, Elliot	West Meriden, Conn	Iron and steel, plating	Dec. 26, 1865.
48,213	Savage, Elliot, and Henry Stratton	West Meriden, Conn	Steel, hardening and tempering	June 13, 1865.
46,713	Savage, Joseph G	South Reading, Mass	Sand, &c., machine for pulverizing	Mar. 7, 1865.
51,224	Savage, J. J	Troy, N. Y	Stoves, cook	Nov. 28, 1865.
48,102	Savage, William G	Clinton, Ill	Cultivators	June 6, 1865.
47,987	Saviers, M., deceased, by Matilda Saviers, administratrix, and W. N. Ayres	Wyandott, Ohio; Bristolville, Ohio	Planters, corn	May 30, 1865.
49,059	Savy, D. A. B., assignor to E. T. Vanderberg	France	Penholders or pencils, weighing attachment for	July 25, 1865.
49,442	Sawyer, Addison M	Athol, Mass	Supporter, sash	Aug. 15, 1865.
51,624	Sawyer, Charles H	Hollis, Maine	Bed-bottom	Dec. 19, 1865.
48,103	Sawyer, E. A	Portland, Maine	Sail clutch	June 6, 1865.
	Sawyer, Sylvanus, and Edmund E. Safford. (*See* Safford and Sawyer.)			
50,778	Sawyer, Wesley, assignor to self and Francis A. Sawyer	Lowell, Mass	Elevators	Oct. 31, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
45,860	Sawyer, E. H	Orleans, Iowa	Cultivators	Jan. 10, 1865.
48,352	Sax, Antoine Joseph	France	Air of rooms with antiseptic vapors, apparatus for impregnating	June 20, 1865.
47,225	Saxe, Charles A	Philadelphia, Pa	Wells, machine for boring	Apr. 11, 1865.
46,271	Saxton, William	Venice, Mich	Seeding machine	Feb. 7, 1865.
45,940	Sayre, George W	Pisgah, Ohio	Washing machine	Jan. 17, 1865.
47,342	Sayre, George W	Pisgah, Ohio	Car seats, railway	Apr. 18, 1865.
49,656	Sayre, George W	Pisgah, Ohio	Fastener, door	Aug. 29, 1865.
50,170	Sayre, John W., and Alexander C. Schull	Martin's Creek, Pa	Slate frames, machines for dressing edges of	Sept. 26, 1865.
46,395	Scaife, William B	Pittsburg, Pa	Screws, brass, to iron pipes, brazing	Feb. 14, 1865.
48,347	Scanlan, James, assignor to self, S. J. Stine, and George Ross	Lebanon, Pa	Paper-making machines	June 20, 1865.
48,982	Scantlin, Thomas and James M	Evansville, Ind	Evaporators	July 25, 1865.
46,946	Schaap, Richard, jr	Brooklyn, N. Y	Shovel and ash sifter, combined	Mar. 21, 1865.
	Schack and Hotop. (*See* Müller, Burkhard, assignor.)			
	Schaffer, B., and C. Budenburg. (*See* Prusmann, August, ass'or.)			
	Schaffer, B., and C. Budenburg. (*See* Prusmann, August, ass'or.)			
51,485	Scharff, Louis	Spring Mills, Pa	Filter and cooler, combined	Dec. 12, 1865.
45,867	Scharit, Agustus W	St. Louis, Mo	Tide, device for producing motive power by the vertical rise and fall of the.	Jan. 10, 1865.
2,063	Schedler, Joseph, assignor to American Lead Pencil Company	New York, N. Y	Trade-mark to be used on lead pencils (Design)	May 9, 1865.
1,945	Schenck, John H	St. Louis, Mo	Food, concentrated, mode of preparing (Reissue)	May 2, 1865.
47,462	Schenkl, John P., deceased, by Frederika Schenkl, administratrix	Boston, Mass	Sewing machine shuttles, adjustable tension device for	Apr. 25, 1865.
45,951	Schenkl, John P., deceased, by Frederika Schenkl, administratrix, assignor to herself and Edward A. Dana.	Boston, Mass	Projectiles, rifled, packing for	Jan. 17, 1865.
46,536	Schinz, Carl	Baden	Furnace for burning gas	Feb. 21, 1865.
48,594	Schlenker, Erhard	Buffalo, N. Y	Bolt-cutter	July 4, 1865.
49,793	Schlich, Frederick	New York, N. Y	Bottles, stopper for	Sept. 5, 1865.
	Schmadle, John, and John A. Lieb. (*See* Lieb & Schmadel.)			
48,214	Schmadle, John, and John A. Lieb	Newark, N. J	Trunks, roller for	June 13, 1865.
	Schmidt, A. (*See* Riley, J. M., assignor.)			
50,208	Schmidt, Christian C., assignor to A. Schmidt & Bros	New York, N. Y	Steam-pressure gauges	Sept. 26, 1865.
50,991	Schmidt, Christian C., assignor to A. Schmidt & Bros	New York, N. Y	Steam gauges	Nov. 14, 1865.
45,868	Schmitz, B	Brooklyn, N. Y	Billiard indicator	Jan. 10, 1865.
49,443	Schneider, Jacob	Cincinnati, Ohio	Legs, artificial	Aug. 15, 1865.
49,160	Schnitzer, Joseph	New York, N. Y	Photographic lenses	Aug. 1, 1865.
49,794	Schnurr, E	Monroe, Mich	Clothes sprinkler	Sept. 5, 1865.
	Schöllhorn, William, and Frank P. Pfleghar. (*See* Pfleghar & Schöllhorn.) Reissue.			
49,554	Schooley, W. D	Richmond, Ind	Straw cutters	Aug. 22, 1865.
47,226	Schoonmaker, S. Franklin	New York, N. Y	Oil ejectors	Apr. 11, 1865.
47,227	Schoonmaker, S. Franklin	New York, N. Y	Oil ejectors	Apr. 11, 1865.
51,225	Schopp, Francis	New York, N. Y	Fire-arms, breech-loading	Nov. 28, 1865.
51,755	Schott, George	New York, N. Y	Bedstead bottom	Dec. 26, 1865.
47,906	Schon, Karl, assignor to self and G. H. Hull	Lafayette, Ind	Surveying instruments	May 23, 1865.
46,316	Schonberszky, Charles	Russia	Car trucks, railroad, mode of regulating motion of	Feb. 7, 1865.
49,925	Schreiber, Louis	New York, N. Y	Cornets	Sept. 12, 1865.

46,947	Schroeder, Frederick H	Bushnell, Ill	Separators, grain, hopper for	Mar. 21, 1865.
47,988	Schroeder, Frederick H	Bushnell, Ill	Corn-shellers	May 30, 1865.
	Schroeder, Richard E	Rochester, N. Y	Kilns, lime (Extension)	Apr. 24, 1865.
46,272	Schuffenecker, John F	St. Louis, Mo	Brick moulds. (Antedated February 3, 1865)	Feb. 7, 1865.
46,273	Schuffenecker, John F	St. Louis, Mo	Bricks, machine for making. (Antedated February 3, 1865)	Feb. 7, 1865.
50,962	Schulte, Frederick	Philadelphia, Pa	Tobacco pipe	Nov. 14, 1865.
50,499	Schultz, Carl, and Thomas Warker	New York, N. Y	Bathing apparatus. (Antedated October 4, 1865)	Oct. 17, 1865.
50,500	Schultz, Carl, and Thomas Warker	New York, N. Y	Injectors, gaseous liquid. (Antedated October 4, 1865)	Oct. 17, 1865.
47,750	Schultz, Louis	Buffalo, N. Y	Medical compound	May 16, 1865.
46,501	Schuttler, Peter	Chicago, Ill	Hubs while being bored, machines for holding	Feb. 21, 1865.
47,576	Schuttler, Peter	Chicago, Ill	Hubs, machines for boring	May 2, 1865.
	Schuyler, P. C. (*See* Smyth, David M., assignor.)			
	Schwartz, C. C. E., and F. G. Bielefield. (*See* Bielefield & Schwartz.)			
50,848	Schweizer, Franz	New York, N. Y	Bolt-heading machine	Nov. 7, 1865.
49,555	Schwitter, Anton	New York, N. Y	Engine, rose, for ornamenting glass	Aug. 22, 1865.
49,444	Scott, Francis B	Buffalo, N. Y	Cards, show, mode of ornamenting	Aug. 15, 1865.
	Scott, Jared G. (*See* Kniskern, Peter W., assignor.)			
51,756	Scott, John	Ocala, Fla	Carriage wheels	Dec. 26, 1865.
	Scott, John O. (*See* Washburn, F. O., assignor.)			
50,171	Scott, Melchi	Fairfield, Iowa	Tire-shrinking machine	Sept. 26, 1865.
	Scott, Salmon M., and Alfred F. Spaulding. (*See* Spaulding & Scott.)			
	Scott, Salmon M., and Alfred F. Spaulding. (*See* Spaulding & Scott.)			
48,240	Scott, Thomas, assignor to Thomas Scott, sr	Carrollton, Ill	Stoves	June 13, 1865.
46,396	Scouler, James	San Francisco, Cal	Camera, photographic, stand	Feb. 14, 1865.
48,030	Scoville, H. H., jr., assignor to self and E. C. Preble	Chicago, Ill	Amalgamator	May 30, 1865.
48,841	Scoville, Thaddeus S	Williamsport, Pa	Oil from running streams, apparatus for obtaining	July 18, 1865.
50,633	Scranton, J. N., and H. H. Parsons	Bennington, Vt / Hoosick Falls, N. Y	Dentists' mallets	Oct. 24, 1865.
	Scripture, Eliphalet S., and Samuel Short. (*See* Short & Scripture.)			
50,041	Seaman, John, and William T. Henderson	Andover, N. Y	Looms, hand	Sept. 19, 1865.
46,824	Searl, Henry	Rochester, N. Y	Oil ejectors	Mar. 14, 1865.
48,983	Searl, Henry	Rochester, N. Y	Pumps, oil well	July 25, 1865.
48,728	Searle, John	San Francisco, Cal	Wines, process for imparting age to. (Antedated June 15, 1865)	July 11, 1865.
46,948	Sears, Charles, and Tappen Townsend	Monmouth county, N. J / Kings county, N. Y	Buckles	Mar. 21, 1865.
50,279	Sears, Edward V	Boston, Mass	Stockings	Oct. 3, 1865.
47,135	Seaver, Chandler, jr	Boston, Mass	Clothing, clasps for	Apr. 4, 1865.
50,735	Seavey, Charles E	Boston, Mass	Stove cover lifter	Oct. 31, 1865.
	Seavey, C. T., and B. F. Waldron. (*See* Curtis, Andrew J., ass'r.)			
47,366	Seavey, John E., assignor to self and E. S. Hutchins	Kennebunkport, Me	Trace connection	Apr. 18, 1865.
	Secomb, W. W. (*See* Holt, Horace, assignor.)			
	Secomb, W. W. (*See* Holt, Horace, assignor.)			
	Secor, Jerome, and James Bolton. (*See* Bolton & Secor.)			
50,501	Secor, Jerome B	Chicago, Ill	Stamp and canceller, hand	Oct. 17, 1865.
49,834	Secor, Oliver P., assignor to C. L. Bellamy	Chicago, Ill	Hay forks, horse	Sept. 5, 1865.
47,577	Seely, Charles A	New York, N. Y	Amalgamating the precious metals, mode of	May 2, 1865.
	Seely, J. R., and E. (*See* Hay, George R., assignor.)			
46,144	Secly, Samuel J	New York, N. Y	Piers and bulkheads	Jan. 31, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
46,145	Seely, Samuel J.	New York, N. Y.	Car wheels	Jan. 31, 1865.
46,146	Seely, Samuel J.	New York, N. Y.	Docks, &c., construction of	Jan. 31, 1865.
46,147	Seely, Samuel J	New York, N. Y.	Rudders with corrugated surfaces	Jan. 31, 1865.
49,795	Seely, Samuel J	New York, N. Y.	Boots and shoes, soles for	Sept. 5, 1865.
48,842	Seelye, Jacob C	Cambridge, Mass.	Coffin lids, hinging	July 18, 1865.
49,657	Schnders, Henry F	Buffalo, N. Y.	Nail, horse-shoe, machine	Aug. 29, 1865.
48,630	Sehner, Nathaniel, assignor to self and Abraham Huffer	Hagerstown, Md.	Hinges	July 4, 1865.
	Sehner, Nathaniel, and Abraham Huffer. (*See* Huffer & Sehner.)			
46,502	Seibel, Jacob	Manlius, Ill.	Harvesters	Feb. 21, 1865.
47,989	Seibel, Jacob	Manlius, Ill.	Ploughs, gang	May 30, 1865.
47,990	Seibel, Jacob	Manlius, Ill.	Planters, corn	May 30, 1865.
49,310	Seiberlich, Frank	Charlestown, Mass.	Sugar in centrifugal machines, apparatus for liquoring	Aug. 8, 1865.
51,359	Seiberling, John F	Doylestown, Ohio.	Harvesters	Dec. 5, 1865.
	Seiberling, John F. (*See* Baeon, Jerome, assignor.)			
49,658	Seidel, Henry B	Wilmington, Del.	Ores, process for treating	Aug. 29, 1865.
49,926	Seidle, Frederiek	Meebanicsburg, Pa.	Rakes, horse. (Antedated September 6, 1865)	Sept. 12, 1865.
50,738	Seidler, George N	Hartford, Conn.	Bed bottom	Oct. 31, 1865.
50,502	Seipel, John, assignor to Cassius M. Clay	Washington, D. C.	Ordnance, rifling	Oct. 17, 1865.
2,039	Seitz, Louis, assignor to James Toft	New York, N. Y.	Trade mark. (Design)	Mar. 21, 1865.
50,209	Selkirk, Alexander, assignor to Maria Selkirk	Albany, N. Y.	Carriage springs	Sept. 26, 1865.
46,030	Sellers, George Escol	Sellers's Landing, Ill.	Paper stock, pulp-washer for	Jan. 24, 1865.
46,031	Sellers, George Escol	Sellers's Landing, Ill.	Cane stripper	Jan. 24, 1865.
49,445	Sellers, William	Philadelphia, Pa.	Injector, Giffard	Aug. 15, 1865.
46,714	Sellers, William, and Coleman, assignors to Wm. Sellers & Co.	Philadelphia, Pa.	Gun barrels, machine for rifling	Mar. 7, 1865.
47,044	Selover, A	Brooklyn, Ohio	Fruit gatherer	Mar. 28, 1865.
49,311	Selover, A	Brooklyn, Ohio	Hedge trimmer	Aug. 8, 1865.
	Sennett, Abner J., and Charles Truesdale. (*See* Truesdale & Sennett.)			
48,453	Sentell, Charles	Waterloo, N. Y.	Printing rolls, mode of renewing the surface of	June 27, 1865.
49,556	Sergeant, Henry C	Columbus, Ohio	Steam generators	Aug. 22, 1865.
2,082	Sergeant, Henry C	Columbus, Ohio	Boilers, steam (Reissue)	Oct. 3, 1865.
51,625	Serrill, James	Philadelphia, Pa.	Fastenings, drawer	Dec. 19, 1865.
49,835	Sessions, Asa, jr., assignor to Lamb Knitting Machine Company	Springfield, Mass.	Knitting machines	Sept. 5, 1865.
48,984	Settle, A. J.	Schoharie C. H., N. Y.	Jack for shaft coupling	July 25, 1865.
47,865	Severance, James F.	East Bridgewater, Mass.	Leather, machine for cutting	May 23, 1865.
50,280	Scverson, William H	Cohoes, N. Y.	Straw boards, apparatus for drying	Oct. 3, 1865.
48,104	Seward, George M., and Samuel H	Guilford, Conn.	Planters, seed	June 6, 1865.
45,756	Sexton, Daniel	San Gabriel, Cal.	Engines, steam	Jan. 3, 1865.
49,796	Sexton, Daniel	San Gabriel, Cal	Quartz crusher	Sept. 5, 1865.
48,215	Sexton, Deming W	East Hampton, Conn.	Coffin handles, casting	June 13, 1865.
46,148	Sexton, S. B	Baltimore, Md.	Coal seuttle	Jan. 31, 1865.
47,136	Sexton, S. B	Baltimore, Md.	Stoves, base-burning	Apr. 4, 1865.
45,757	Seymour, Edward L	New York, N. Y.	Ore separator. (Antedated December 3, 1862)	Jan. 3, 1865.
51,662	Seymour, Edward L., assignor to Charles Raht	New York, N. Y.	Ores, apparatus for separating and concentrating	Dec. 19, 1865.
	Seymour, Henry. (*See* Campbell, Daniel, assignor.)			

	Seymour, Henry J. (*See* Wood, Robert, assignor.) Reissue.			
	Seymour, William H	Brockport, N. Y	Reaping machines (Extension)	July 3, 1865.
	Seymour, William H	Brockport, N. Y	Reaping machines (Extension)	July 3, 1865.
	Seymour, William H	Brockport, N. Y	Reaping machines (Extension)	July 3, 1865.
50,281	Seymour, W. S	Ravenna, Ohio	Mill rollers	Oct. 3, 1865.
51,757	Shabley, Charles	Brooklyn, N. Y	Pulverizing and furrowing device	Dec. 26, 1865.
46,825	Shackleton, John C. and George	Lawrence, Mass	Steam traps	Mar. 14, 1865.
49,557	Shafer, John	Sparta, N. Y	Seeding machine	Aug. 22, 1865.
	Shaffer, Samuel K., and John Beall. (*See* Beall & Shaffer.)			
51,671	Shaffner, T. P	Louisville, Ky	Electricity, blasting by	Dec. 19, 1865.
51,672	Shaffner, T. P	Louisville, Ky	Cartridges	Dec. 19, 1865.
51,673	Shaffner, T. P	Louisville, Ky	Cartridges for blasting	Dec. 19, 1865.
51,674	Shaffner, T. P	Louisville, Ky	Electricity, blasting by	Dec. 19, 1865.
47,991	Shaler, Nathaniel S	Newport, Ky	Air-cooling apparatus	May 30, 1865.
51,226	Shaler, Reuben	Madison, Conn	Balances	Nov. 28, 1865.
49,161	Shannon, James	Cohoes, N. Y	Lathes, wood-turning, cutters for. (Antedated July 30, 1865)	Aug. 1, 1865.
	Shannon, Oscar J., and Marcus Brown. (*See* Brown & Shannon.)			
47,228	Sharlow, Abel	Fort Lee, N. J	Boiler, egg	Apr. 11, 1865.
51,486	Sharp, D. P	Ithaca, N. Y	Rakes, horse	Dec. 12, 1865.
50,634	Sharp, George C	New York, N. Y	Railroads, track clearer for	Oct. 24, 1865.
1,851	Sharp, Thomas	Chicago, Ill	Car wheels (Reissue)	Jan. 10, 1865.
48,729	Sharps, Christian	Philadelphia, Pa	Projectiles for rifled ordnance	July 11, 1865.
	Sharretts, J. F., *et al.* (*See* Reinhold, C. G., assignor.)			
49,162	Sharts, Theodore	Albany, N. Y	Railway frog	Aug. 1, 1865.
49,593	Shattuck, Henry, assignor to Bennet Hotchkiss	Hamden, Conn	Hammer, atmospheric	Aug. 22, 1865.
48,631	Shattuck, Job, assignor to self and John S. Proctor	Brookline, N. H	Pantry	July 4, 1865.
49,797	Shattuck, John S	Medford, Mass	Ice-cream freezers	Sept. 5, 1865.
46,032	Shaver, A. G	New Haven, Conn	Eraser	Jan. 24, 1865.
49,558	Shaver, A. G	New Haven, Conn	Erasers and burnishers	Aug. 22, 1865.
49,559	Shaver, A. G	New Haven, Conn	Eraser and burnisher, combined	Aug. 22, 1865.
	Shaw & Clark. (*See* Huston, Arthur, assignor.)			
2,138	Shaw, Charles A., and James R. Clark	Biddeford, Maine	Sewing machine (Design)	July 18, 1865.
50,393	Shaw, Cyrus B	Brooklyn, N. Y	Window frame and sash	Oct. 10, 1865.
49,446	Shaw, D. L	Lansing, Iowa	Iron, sad, fixture	Aug. 15, 1865.
	Shaw, G. C., *et al.* (*See* Hiscock, Joseph H., assignor.)			
	Shaw, George W., and D. H. Wiswell. (*See* Wiswell & Shaw.)			
50,282	Shaw, Henry F	West Roxbury, Mass	Car, locomotive	Oct. 3, 1865.
50,283	Shaw, Henry F	West Roxbury, Mass	Motion, transmitting	Oct. 3, 1865.
50,740	Shaw, H. F. and G. F	West Roxbury, Mass	Corn shellers	Oct. 31, 1865.
46,149	Shaw, H. M	Fremont, Ohio	Staves, machines for cutting	Jan. 31, 1865.
46,150	Shaw, Hiram M., and Charles B. Stillwell	Fremont, Ohio	Bread and meat slicer	Jan. 31, 1865.
46,590	Shaw, J. B	New Haven, Conn	Trace lock	Feb. 28, 1865.
49,798	Shaw, Jehyleman	Bridgeport, Conn	Wells, artesian, drills for	Sept. 5, 1865.
49,659	Shaw, Napoleon B. and David	Sanbornton, N. H	Match, friction, composition	Aug. 29, 1865.
50,663	Shaw, Samuel J., assignor to self, F. O. Kendall, and F. A. Marshall.	Marlboro', Mass	Collars, paper	Oct. 24, 1865.
47,578	Shaw, Thomas	Philadelphia, Pa	Steam gauges	May 2, 1865.
47,663	Shaw, Thomas	Philadelphia, Pa	Springs	May 9, 1865.
48,216	Shaw, Thomas	Philadelphia, Pa	Faucets and valves, grinding	June 13, 1865.
48,730	Shaw, Thomas	Philadelphia, Pa	Low-water signals	July 11, 1865.
49,560	Shaw, Thomas	Philadelphia, Pa	Car spring	Aug. 22, 1865.
46,309	Shaw, Thomas, assignor to self and Philip S. Justice	Philadelphia, Pa	Motion, mode of compensating for loss of	Feb. 7, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
49,660	Shaw, William	Hudson, N. Y.	Stop, window, adjustable	Aug. 29, 1865.
49,040	Shaw, William A., assignor to self, G. Willard, and L. and J. Colwell.	New York, N. Y.	Pipe, lead, tin lined, manufacture of	July 25, 1865.
1,859	Shaw, William F	Boston, Mass	Heater for smoothing irons (Reissue)	Jan. 31, 1865.
	Shaw, William R., and Thomas B. Wilson. (*See* Wilson & Shaw.)			
	Shear, J. H., and J. Packer. (*See* Williams, A. C., assignor.)			
49,197	Shears, A. L., assignor to self and H. T. Woodman	Flint, Mich	Boat, life	Aug. 1, 1865.
	Shedd & Edson. (*See* Edson, William, assignor.)			
50,739	Shedd, J. Herbert, and Benjamin Worcester	Waltham, Mass	Furnace, hot-air	Oct. 31, 1865.
51,091	Shedd, Thomas, and Frederick Glockner	Williamsburg, N. Y	Chair and scale, exercising, child's	Nov. 21, 1865.
	Sheehan, J. M., *et al.* (*See* Deltour, William, assignor.)			
45,869	Sheffield, John	Putneyville, N. Y	Wells, drills for boring	Jan. 12, 1865.
47,866	Sheffield, John	Putneyville, N. Y	Water meters	May 23, 1865.
48,105	Sheffield, John	Putneyville, N. Y	Pumps, deep well	June 6, 1865.
47,910	Sheilds, Francis Webb	England	Telegraphic posts. (Patented in England October 6, 1864)	May 23, 1865.
	Sheldon, A. W., and William Potter. (*See* Potter & Sheldon.)			
48,315	Sheldon, Gilbert L	Hartsville, Mass	Truck for pulling stones	June 20, 1865.
47,664	Sheldon, P. B	Prattsburg, N. Y	Flower stand. (Antedated May 1, 1865)	May 9, 1865.
	Sheldrake, Charles C., and C. M. Berry. (*See* Berry & Sheldrake.)			
	Sheller, Samuel, and W. H. Hartman. (*See* Hartman & Sheller.)			
45,870	Shelley, S. T	Louisville, Ky	Axle boxes, railroad	Jan. 12, 1865.
47,045	Shepard, Charles J	Brooklyn, N. Y	Range, cooking	Mar. 28, 1865.
47,500	Shepard, Josiah, assignor to self and Richard Butler	New Britain, Conn	Harness, fastening for	Apr. 25, 1865.
50,635	Shepard, William A., assignor to self, R. M. Bassett, and H. G. Smith.	New York, N. Y	Press, cotton	Oct. 24, 1865.
49,836	Shepardson, H. S., assignor to H. S. Shepardson & Co	Shelburne Falls, Mass	Grater for spices and fruits	Sept. 5, 1865.
50,306	Shepardson, H. S., assignor to H. S. Shepardson & Co	Shelburne Falls, Mass	Jacks, lifting	Oct. 3, 1865.
50,779	Shepardson, H. S., assignor to H. S. Shepardson & Co	Shelburne Falls, Mass	Household and culinary operations, machines for facilitating	Oct. 31, 1865.
50,882	Shepardson, H. S., assignor to H. S. Shepardson & Co	Shelburne Falls, Mass	Car coupling	Nov. 7, 1865.
49,927	Shepherd, Samuel, and Ammi M. George	Nashua, N. H	Collar, paper, machines	Sept. 12, 1865.
2,099	Sheppard, Isaac A	Philadelphia, Pa	Range, cooks' (Design)	June 13, 1865.
2,196	Sheppard, Isaac A	Philadelphia, Pa	Stove, cooks', plates of a (Design)	Oct. 10, 1865.
2,098	Sheppard, Isaac A., and Julius Hobzer	Philadelphia, Pa	Stove, cooks' (Design)	June 13, 1865.
49,561	Sheppard, William	New York, N. Y	Soap, liquid	Aug. 22, 1865.
50,042	Sherlock, George A	New York, N. Y	Stool, piano	Sept. 19, 1865.
48,843	Sherman, Hiram C	Buffalo, N. Y	Casks, machines for driving hoops on	July 18, 1865.
	Sherman, J. R., *et al.* (*See* Batcheller, Charles, assignor.)			
49,163	Sherman, Josiah J	Albany, N. Y	Car trucks, key-bolt connections of	Aug. 1, 1865.
49,447	Sherman, S. J	Brooklyn, N. Y	Skirt, hoop, joints	Aug. 15, 1865.
49,164	Sherman, S. M	Fort Dodge, Iowa	Rakes, horse	Aug. 1, 1865.
48,595	Sherry, Theron R	Newark, N. J	Basket	July 4, 1865.
50,172	Sherwood, Allen	Auburn, N. Y	Jars, fruit	Sept. 26, 1865.
45,758	Sherwood, Lyman	Marine, Ill	Cultivators	Jan. 3, 1865.
50,394	Shield, George	Cincinnati, Ohio	Valves, cone	Oct. 10, 1865.
46,949	Shiland, Alexander	West Troy, N. Y	Drills	Mar. 21, 1865.

49,928	Shillaber, John F	Portsmouth, N. H	Grindstone	Sept. 12, 1865.
46,194	Shinn, John, assignor through mesne assignments to self and N. H. Graham.	Philadelphia, Pa	Wool in carding machines, machinery for oiling	Jan. 31, 1865.
48,348	Shinn, John, assignor to self, George S. Harwood, and George H. Quincy.	Leverington, Pa	Wool, machinery for oiling	June 20, 1865.
	Shipman, H. A., *et al.* (*See* Hendryx, A. B., assignor.)			
47,579	Shirtcliff, Charles	Philadelphia, Pa	Knitting machine, circular	May 2, 1865.
50,284	Shive, David	Philadelphia, Pa	Photographic purposes, duplicating deflector for	Oct. 3, 1865.
	Shiverick, Benj., and N. S. Sibley. (*See* Sibley & Shiverick.)			
	Shoemaker, Henry J., and David H. Metcalf. (*See* Metcalf & Shoemaker.)			
51,227	Shoemaker, Nicholas	Montrose, Pa	Mills, grinding	Nov. 28, 1865.
45,759	Shoenberger, Edwin F	Philadelphia, Pa	Cars, seats of railway	Jan. 3, 1865.
48,844	Shogren, Andrew	Sandwich, Ill	Plough clevis	July 18, 1865.
	Shöllhorn, William, and Frank P. Pfleghar. (*See* Pfleghar & Shöllhorn.)			
50,741	Short, James	Roxbury, Mass	Hod	Oct. 31, 1865.
50,742	Short, Samuel, and Eliphalet S. Scripture	Brooklyn, N. Y	Oil cans	Oct. 31, 1865.
45,897	Short, Thomas	Fairmount, Ill	Plough, gang	Jan. 10, 1865.
46,274	Short, Thomas	Fairmount, Ill	Cultivator and harrow	Feb. 7, 1865.
45,760	Short, William H	Brooklyn, E. D., N. Y	Grates for furnaces	Jan. 3, 1865.
	Shove, George. (*See* Thacher, Charles, assignor.)			
46,760	Shove, George, assignor to self and Charles Thacher	Yarmouth, Mass	Cranberry gatherer. (Antedated August 19, 1863)	Mar. 7, 1865.
49,562	Shreffler, Samuel	Joliet, Ill	Brick machine	Aug. 22, 1865.
49,929	Shriner, John O	New Castle, Ind	Coffee and tea drawer	Sept. 12, 1865.
48,217	Shriver, Walter	New York, N. Y	Presses, copying, &c	June 13, 1865.
	Shull, Alexander S., and John W. Sayre. (*See* Sayre & Shull.)			
2,118	Shunk, Christian	Youngstown, Ohio	Iron, refining (Reissue)	Nov. 28, 1865.
50,173	Shurtleff, S. Addison	Taunton, Mass	Dividers	Sept. 26, 1865.
46,503	Shute, Charles H	Edgartown, Mass	Photographic plate-holders, rotary	Feb. 21, 1865.
50,963	Shute, R. S	Philadelphia, Pa	Churns	Nov. 14, 1865.
48,248	Sibley, John J., assignor to Bruen Manufacturing Company	New York, N. Y	Sewing machine	June 13, 1865.
49,837	Sibley, John J., assignor to Bruen Manufacturing Company	New York, N. Y	Sewing machine stitch	Sept. 5, 1865.
49,041	Sibley, N. S., and B. Shiverick	Weston, Mass Waltham, Mass	Furnace doors	July 25, 1865.
46,397	Siccardi, John B., and James Hyde	New York, N. Y	Wool, flax, cotton, &c., combs for combing	Feb. 14, 1865.
49,599	Sicouret, P	Spain	Well tubes, packing for	Aug. 22, 1865.
	Silkman, William M., and William P. Connell. (*See* McClare, William, assignor.)			
50,174	Sill, George	Wilkins, Pa	Steam generators	Sept. 26, 1865.
	Silliman, Charles. (*See* Turner, Don Carlos, assignor.)			
	Silver, Albert R. (*See* Dole, L. A., assignor.)			
2,039	Silver, Thomas	New York, N. Y	Engine, steam, governor (Reissue)	July 25, 1865.
51,663	Silvers, Aaron, assignor to self, T. L. Kenworthy, C. A. Clegg, and S. J. Walker.	Collinsville, Ohio	Broom head	Dec. 19, 1865.
48,731	Silvers, John	Lambertsville, N. J	Flax-pulling machines	July 11, 1865.
50,043	Silvester, Nathaniel	Boston, Mass	Boot and shoe patterns, graduating	Sept. 19, 1865.
49,357	Sim, William, and Arthur Barff	Glasgow, North Britain	Burning hydro-carbons, apparatus for	Aug. 8, 1865.
50,175	Simmons, Edward	South Providence, R. I	Clamping devices	Sept. 26, 1865.
2,139	Simmons, Franklin, assignor to William Miller	Washington, D. C	Medallion of Abraham Lincoln (Design)	July 18, 1865.
2,140	Simmons, Franklin, assignor to William Miller	Washington, D. C	Medallion of General Grant (Design)	July 18, 1865.
2,141	Simmons, Franklin, assignor to William Miller	Washington, D. C	Medallion of Vice-Admiral Farragut (Design)	July 18, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
2,142	Simmons, Franklin, assignor to William Miller	Washington, D. C	Medallion of Major General Hancock (Design)	July 18, 1865.
2,143	Simmons, Franklin, assignor to William Miller	Washington, D. C	Medallion of Major General Wright (Design)	July 18, 1865.
2,144	Simmons, Franklin, assignor to William Miller	Washington, D. C	Medallion of Major General Parke (Design)	July 18, 1865.
2,145	Simmons, Franklin, assignor to William Miller	Washington, D. C	Medallion of Major General Hooker (Design)	July 18, 1865.
2,146	Simmons, Franklin, assignor to William Miller	Washington, D. C	Medallion of William H. Seward (Design)	July 18, 1865.
2,147	Simmons, Franklin, assignor to William Miller	Washington, D. C	Medallion of Chief Justice Chase (Design)	July 18, 1865.
	Simmons, Isaac, and John H. Irwin. (*See* Irwin & Simmons.)			
48,985	Simmons, S. D	San Francisco, Cal	Bread cutter	July 25, 1865.
47,261	Simmons, Thomas	Chicago, Ill	Filters. (Antedated April 3, 1865)	Apr. 11, 1865.
50,176	Simmons, Thomas	Chicago, Ill	Barrels, vents for	Sept. 26, 1865.
49,448	Simonds, Warren A	Boston, Mass	Air, apparatus for carburetting	Aug. 15, 1865.
49,449	Simonds, Warren A	Boston, Mass	Gas, apparatus for regulating the pressure and delivery of	Aug. 15, 1865.
46,976	Simonds, Warren A., assignor to self and S. Ingersoll Lovett	Boston, Mass	Air, apparatus for carburetting	Mar. 21, 1865.
51,664	Simonds, Warren A., ass'r to the American Gas Machine Company	Boston, Mass	Gas regulator	Dec. 19, 1865.
47,751	Simonton, John W., and O. T. Struble	Taylorville, Ind	Engines, steam, rotary	May 16, 1865.
50,044	Simpson, Augustus and George	Woonsocket Falls, R. I	Spinning jacks	Sept. 19, 1865.
46,608	Simpson, Edwin L., assignor to Simon Stevens	Bridgeport, Conn	Rubber, India, for the manufacture of hose, belting, packing, &c., preparation of.	Feb. 28, 1865.
46,609	Simpson, Edwin L., assignor to Simon Stevens	Bridgeport, Conn	Rubber, hard, manufacture of	Feb. 28, 1865.
46,610	Simpson, Edwin L., assignor to Simon Stevens	Bridgeport, Conn	Rubber, India, gutta percha, &c., process of manufacturing	Feb. 28, 1865.
46,611	Simpson, Edwin L., assignor to Simon Stevens	Bridgeport, Conn	Fabrics, water-proof	Feb. 28, 1865.
48,454	Simpson, S. L	New York, N. Y	Rulers	June 27, 1865.
46,151	Sims, Elbridge	Antwerp, N. Y	Clothes dryer	Jan. 31, 1865.
51,626	Sinclaire, Thomas R	New York, N. Y	Cars, railroad, mode of starting	Dec. 19, 1865.
	Singer, Isaac M	Yonkers, N. Y	Sewing machines (Extension)	Aug. 7, 1865.
49,661	Sinnhold, Paul	St. Louis, Mo	Planter, seed, and cultivator, combined	Aug. 29, 1865.
46,533	Sintzenich, E. B., assignor to self and Joseph Hall	Rochester, N. Y	Boilers, steam	Feb. 21, 1865.
50,395	Sischo, Reuben, assignor to I. L. Smith and I. B. Myers	Tuscola, Ill	Bolt cutters	Oct. 10, 1865.
	Sisson, Henry T. (*See* Boeklen, Reinhold, assignor.)			
48,845	Skelton, Thomas	Rockford, Ill	Horseshoes	July 18, 1865.
45,871	Skillman, Sidney	Jersey City, N J	Cars, railroad	Jan. 10, 1865.
50,424	Skinner, E. W., assignor to self and O. S. Willey	Madison, Wis	Sorghum evaporator	Oct. 10, 1865.
49,312	Skinner, Franklin	New Haven, Conn	Pulleys by friction, tightening	Aug. 8, 1865.
48,846	Skinner, James B	Rockford, Ill	Ploughs, gang	July 18, 1865.
51,627	Skinner, Robert	San Francisco, Cal	Pipes, water, manufacture of	Dec. 19, 1865.
50,177	Skinner, Robert, George Duncan, and C. Merighi	San Francisco, Cal	Roofing, mastic, method of preparing	Sept. 26, 1865.
	Skinner, W. H., *et al.* (*See* Clark, William C., assignor.)			
	Skow, Charles J., *et al.* (*See* Fostensen, Iversen & Skow.)			
	Slack, C. A., and S. B. Phelps. (*See* Phelps & Slack.)			
	Slack, William D. (*See* Murphy, Griffith, assignor.)			
	Slade, Andrew R. (*See* Spencer, Isaac H., assignor.)			
51,488	Slaight, Thomas	Newark, N. J	Padlocks	Dec. 12, 1865.
49,198	Slape, William, assignor to self and H. S. Marks	Salem, N. J	Salve	Aug. 1, 1865.
46,152	Slate, Dwight	Hartford, Conn	Lathe, turning	Jan. 31, 1865.
47,463	Slater, Charles	Brooklyn, N, Y	Ships-of-war	Apr. 25, 1865.

47,992	Slatter, William	Alleghany, Pa	Ambulances	May 30, 1865.
	Slimpert, G. H., and John C. Brown. (*See* Brown & Slimpert.)			
48,318	Sloan, Thomas J	New York, N. Y	Vegetables, machine for cutting and reducing	June 20, 1865.
	Sloan, Thomas J	New York, N. Y	Screw blanks, machine for arranging and feeding. (Extension.)	
	Sloan, Thomas J	New York, N. Y	Screws, wood, machinery for shaving, nicking, and reshaving. (Extension.)	
	Sloane, W. and J. (*See* Hutchinson, James, assignor.)			
	Slocum, John. (*See* Foster, Junius, assignor.)			
47,752	Sloeum, William T	Philadelphia, Pa	Pipe, smoking	May 16, 1865.
47,606	Slocum, William T., assignor to James S. Mason & Co	Philadelphia, Pa	Boxes, metal, manufacture of	May 2, 1865.
48,031	Slocum, William T., assignor to James S. Mason & Co	Philadelphia, Pa	Boxes, manufacture of	May 30, 1865.
49,450	Slonaker, William H	Cooperstown, Pa	Churns	Aug. 15, 1865.
47,993	Slusser, Joseph	Cincinnati, Ohio	Boring jar	May 30, 1865.
50,664	Small, George G., assignor to self and Charles H. Drummond	New York, N. Y	Table, folding	Oct. 24, 1865.
49,451	Small, John	St. Louis, Mo	Files, saws, &c., machine for tempering	Aug. 15, 1865.
	Smart, Charles. (*See* Meacham, George A., assignor.) Reissue.			
	Smedley, Thomas J., *et al.* (*See* Collins, Evans & Smedley.)			
47,994	Smelley, William F	Vevay, Ind	Gates, farm	May 30, 1865.
	Smith & Burnham. (*See* Beers, Horace, assignor.)			
49,563	Smith, A. J	Wayland, Mich	Beehives	Aug. 22, 1865.
50,396	Smith, Albert M	Brooklyn, N. Y	Sewing machines, guides for. (Antedated September 27, 1865).	Oct. 10, 1865.
47,607	Smith, Andrew P., deceased, by Abbie J. Smith, administratrix	Litchfield, Conn	Churns, pneumatic	May 2, 1865.
2,016	Smith, Austin S., assignor through mesne assignments to Isaac P. Tice.	New York, N. Y	Chair bottom or back (Reissue)	June 27, 1865.
	Smith, Benjamin and Adam, and James Arkell. (*See* Arkell & Smith.)			
	Smith, Benjamin, and James Arkell. (*See* Arkell & Smith.)			
51,228	Smith, Benjamin M	New York, N. Y	Fans	Nov. 28, 1865.
	Smith, Charles F., *et al.* (*See* Cooley, Smith & Bradley.)			
47,046	Smith, Cornelius H	Rock Island, Ill	Mining, placer	Mar. 28, 1865.
	Smith, C. S., and Henry Holcroft. (*See* Holcroft & Smith.)			
50,045	Smith, Daniel Y	Joliet, Wis	Auger handles	Sept. 19, 1865.
48,241	Smith, Dwight L., assignor to Waterbury Buckle Company	Waterbury, Conn	Buckle	June 13, 1865.
	Smith, E., and William Woods. (*See* Woods & Smith.)			
	Smith, E., and B. T. Fellows. (*See* Saunders, Abiel F., assignor.)			
50,046	Smith, Edward	New York, N. Y	Rigging, standing, means of attaching shear soles to	Sept. 19, 1865.
48,317	Smith, Erastus W	New York, N. Y	Bridges, piers for	June 20, 1865.
50,397	Smith, Ernest	New York, N. Y	Sofa or lounge	Oct. 10, 1865.
47,753	Smith, Francis F	Collinsville, Conn	Plough castings	May 16, 1865.
51,229	Smith, Franklin G	Columbia, Tenn	Steam gun for driving stock from railroad tracks	Nov. 28, 1865.
46,591	Smith, Fridoline, and Peter Swope	Tiffin, Ohio	Wood-bending machines	Feb. 28, 1865.
2,105	Smith, G., and H. Brown, assignors to Raymond, Campbell & Co.	Philadelphia, Pa	Stove, plates of a (Design)	June 27, 1865.
2,106	Smith, G., and H. Brown, assignors to Smith, Wells & Co	Philadelphia, Pa	Stove, panel of a (Design)	June 27, 1865.
2,153	Smith, G., and H. Brown, assignors to Marshband & McConkey	Philadelphia, Pa	Stove, cook's, plates of a (Design)	Aug. 1, 1865.
48,455	Smith, George L	Brooklyn, N. Y	Grates for steam-boiler furnaces	June 27, 1865.
46,715	Smith, G. W	N. Whitehall Township, Pa.	Liniment	Mar. 7, 1865.
51,230	Smith, George W., and Charles F. Herris	Covington, Ky / Cincinnati, Ohio	Drills, rock	Nov. 28, 1865.
51,092	Smith, H., and D. B. Wesson	Springfield, Mass	Fire-arms, revolving	Nov. 21, 1865.
50,178	Smith, H. B	Lowell, Mass	Planing machines	Sept. 26, 1865.
50,637	Smith, H. B	Lowell, Mass	Planing machines	Oct. 24, 1865.
48,596	Smith, Hamilton E	Cincinnati, Ohio	Washing machine	July 4, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
48,732	Smith, Hamilton E	Cincinnati, Ohio	Stoves, petroleum	July 11, 1865.
50,638	Smith, Hamilton E	Cincinnati, Ohio	Washing machine	Oct. 24, 1865.
50,964	Smith, Hamilton E	Cincinnati, Ohio	Laundry, family	Nov. 14, 1865.
46,716	Smith, Hannibal B	Springfield, Mass	Plough, side-hill	Mar. 7, 1865.
47,580	Smith, Henry	Naubuc, Conn	Sleds and carriages	May 2, 1865.
46,826	Smith, Henry D	New York, N. Y	Tobacco, chewing, preparing	Mar. 14, 1865.
	Smith, H. G., *et al.* (*See* Shepard, William A., assignor.)			
	Smith, H. Julius, and Moses G. Farmer. (*See* Farmer & Smith.)			
51,360	Smith, H. K	Norwich, Conn	Friction clutch. (Antedated November 18, 1865)	Dec. 5, 1865.
	Smith, J. L., and J. B. Myers. (*See* Sischs, Reuben, assignor.)			
46,398	Smith, J. N	Galva, Ill	Planters, corn	Feb. 14, 1865.
	Smith, Jacob, and S. Davis. (*See* Petegrew, David L., assignor.)			
47,076	Smith, John	Great Britain	Boilers, fusible plugs for	Mar. 28, 1865.
46,275	Smith, John, deceased, by W. M. Bates and Catharine Smith, administrators.	Kingston, N. Y	Gunpowder, drying and glazing	Feb. 7, 1865.
47,867	Smith, John, and Edward M. Nutter	Feltonville, Mass	Game board. (Antedated March 3, 1865)	May 23, 1865.
	Smith, John C. (*See* Beyer, Jacob, assignor.)			
48,135	Smith, John E., assignor to self and Henry C. Griff	Waterbury, Conn	Buckle	June 6, 1865.
50,743	Smith, John H	New York, N. Y	Peat, method of treating	Oct. 31, 1865.
51,131	Smith, John H	New York, N. Y	Peat, treating	Nov. 28, 1865.
50,849	Smith, John, James, and Charles	Philadelphia, Pa	Car, springing	Nov. 7, 1865.
50,850	Smith, John, James, and Charles	Philadelphia, Pa	Car, springing	Nov. 7, 1865.
46,504	Smith, John W	Boston, Mass	Rivets	Feb. 21, 1865.
47,995	Smith, John W	Iowa Point, Kan	Harvesters, corn	May 30, 1865.
47,868	Smith, John Y	Alexandria, Va	Wells, boring	May 23, 1865.
47,869	Smith, John Y	Alexandria, Va	Valves, safety	May 23, 1865.
47,870	Smith, John Y	Alexandria, Va	Drills, rock	May 23, 1865.
47,871	Smith, John Y	Alexandria, Va	Oil ejectors	May 23, 1865.
48,106	Smith, John Y	Alexandria, Va	Oil ejectors	June 6, 1865.
	Smith, J. Y., and Herman Haupt. (*See* Haupt & Smith.)			
	Smith, J. Y., and Herman Haupt. (*See* Haupt & Smith.)			
50,503	Smith, Joseph	Providence, R. I	Composition, fire-kindling	Oct. 17, 1865.
46,862	Smith, Joseph M	Jersey City, N. J	Faucets	Mar. 14, 1865.
48,318	Smith, Joseph M	Jersey City, N. J	Faucet, measuring	June 20, 1865.
46,863	Smith, Joseph N., assignor to self and John F. Partiage	Jersey City, N. J	Hay machines for raking and loading	Mar. 14, 1865.
46,399	Smith, Joseph T	Springfield, Ill	Brick machine	Feb. 14, 1865.
	Smith, K. (*See* Porter D'Arcy, assignor.) Reissue.			
	Smith, Leander E., and Lucius Jordon. (*See* Jordon & Smith.)			
	Smith, L. S. (*See* Hubbard, Orange B., assignor.)			
46,033	Smith, Lyman	Erie, Pa	Oils, &c., apparatus for extracting	Jan. 24, 1865.
48,107	Smith, Lyman	Erie, Pa	Extracts, apparatus for making	June 6, 1865.
48,986	Smith, Marion	New Haven, Conn	Blowers, fan, turbine	July 25, 1865.
50,851	Smith, Milton J	Dansville, N. Y	Churn dasher	Nov. 7, 1865.
47,872	Smith, Moore, assignor to self and T. W. Willington	Worcester, Mass	Rakes, horse	May 23, 1865.
50,398	Smith, N. E	Cleveland, Ohio	Lightning rod joints	Oct. 10, 1865.

	Smith, O. C., and J. A. Barrett. (*See* Barrett & Smith.)			
	Smith, Otis A., and Charles A. King. (*See* King & Smith.)			
	Smith, Patrick. (*See* Davis, Jarvis, assignor.)			
49,662	Smith, Peter	New York, N. Y	Furnaces, boiler	Aug. 29, 1865.
2,100	Smith, Phineas	New York, N. Y	Stoves, flanges of a (Design)	June 13, 1865.
49,930	Smith, Ralph	Brooklyn, N. Y	Oar, rigged, or boat fin	Sept. 12, 1865.
* 45,761	Smith, Robert A	Philadelphia, Pa	Cart, ash	Jan. 3, 1865.
48,847	Smith, Robert A	Philadelphia, Pa	Vessel for reception and transportation of night soil. (Antedated July 6, 1865.)	July 18, 1865.
47,464	Smith, Robert L	Stockport, N. Y	Stamps, revenue, machine for attaching	Apr. 25, 1865.
49,452	Smith, Samuel J	New York, N. Y	Stamp, hand	Aug. 15, 1865.
	Smith, Sidney. (*See* Horton, Marcus L., assignor.)			
	Smith, Sidney. (*See* Horton, Marcus L., assignor.)			
50,744	Smith, Thomas	Cincinnati, Ohio	Coal scuttles	Oct. 31, 1865.
46,505	Smith, Thomas, and Henry J. Brown	Detroit, Mich	Tobacco pipe-stems	Feb. 21, 1865.
50,285	Smith, William	Philadelphia Pa	Hats, ventilating, device for	Oct. 3, 1865.
	Smith, William, *et al.* (*See* Higley, Peter, assignor.)			
	Smith, William, executor, &c. (*See* Beckwith, Enos D.)			
51,758	Smith, William B	New York, N. Y	Egg-beater	Dec. 26, 1865.
	Smith, William T., and William Quann. (*See* Quann & Smith.)			
50,544	Smith, W. H	England	Photographs	Oct. 17, 1865.
47,754	Smith, Wilson H	Birmingham, Conn	Projectiles for rifled ordnance, packing	May 16, 1865.
	Smoot, Samuel S. (*See* Byrne, Thomas, assignor.)			
51,232	Smyth, C. A	Charleston, Ill	Brake, self-acting	Nov. 28, 1865.
50,504	Smyth, David M	New York, N. Y	Boxes, wood and paper	Oct. 17, 1865.
51,361	Smyth, David M	New York, N. Y	Collars, paper, machines for making	Dec. 5, 1865.
51,665	Smyth, David M., assignor to self and P. C. Schuyler	New York, N. Y	Clutch, for connecting and disconnecting machinery	Dec. 19, 1865.
49,564	Smyth, Henry	San Lorenzo, Cal	Ploughs, gang	Aug. 22, 1865.
49,565	Snedeker, Nelson S	Philadelphia, Pa	Furnaces, puddling, iron	Aug. 22, 1865.
47,755	Sneider, C. E	Baltimore, Md	Fire-arms, breech-loading	May 16, 1865.
46,054	Sneider, Charles E., assignor to self and Thomas Poultney, &c	Baltimore, Md	Fire-arms, method of converting muzzle into breech-loading	Jan. 24, 1865.
46,612	Sneider, Charles E., assignor to self and Thomas Poultney, &c	Baltimore, Md	Fire-arms, revolving	Feb. 28, 1865.
49,668	Snell, Edward	Great Britain	Anchor. (Patented in England July 22, 1864)	Aug. 29, 1865.
	Snell, J., *et al.* (*See* Zernes, Wm., assignor.)			
50,639	Snell, Wm. W	Rushford, Minn	Beehives, swarm indicators for	Oct. 24, 1865.
48,848	Snow, George K	Watertown, Mass	Collar, paper, packing, envelope	July 18, 1865.
46,310	Snow, George K., assignor to self and March Brothers, Pierce & Co.	Watertown, Mass	Collars, shirt, paper	Feb. 7, 1865.
46,426	Snow, George K., assignor to self and March Brothers, Pierce & Co.	Watertown, Mass	Neck-tie supporters	Feb. 14, 1865.
51,233	Snow, George K., assignor to self and March Brothers, Pierce & Co.	Watertown, Mass	Collar, paper, machines. (Antedated November 15, 1865)	Nov. 28, 1865.
51,234	Snow, George K., assignor to self and March Brothers, Pierce & Co.	Watertown, Mass	Collar, paper, machines	Nov. 28, 1865.
51,235	Snow, George K., assignor to self and March Brothers, Pierce & Co.	Watertown, Mass	Collars, paper, dies for cutting	Nov. 28, 1865.
48,218	Snowdon, John N., and Henry Wilkins	Brownsville, Pa	Furnaces, steam boiler, ejectors for	June 13, 1865.
48,733	Snyder, Adam	Clyde, Ohio	Dryer, fruit	July 11, 1865.
	Snyder, Ira B., *et al.* (*See* Weber, Jacob, assignor.)			
47,229	Snyder, J. H	Killbuck, Ill	Ditching machine	Apr. 11, 1865.
46,592	Snyder, Wm. B	Lakeville, Conn	Balances, spring	Feb. 28, 1865.
48,987	Soggs, Henry	Columbus, Pa	Churn	July 25, 1865.

List of patentees of inventions, designs, and reissues, 1865.—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
51,093	Sollers, Charles H., and John Rhoads	Harrisburg, Pa	Car-brakes, shoe for	Nov. 21, 1865.
46,276	Somes, Daniel E	Washington, D. C	Buildings or rooms for the preservation of food and for other purposes.	Feb. 7, 1865.
46,277	Somes, Daniel E	Washington, D. C	Refrigerators for preserving articles of food	Feb. 7, 1865.
46,593	Somes, Daniel E	Washington, D. C	Ships and other vessels, cooling and ventilating	Feb. 28, 1865.
46,594	Somes, Daniel E	Washington, D. C	Brewing and distilling, cooling and condensing apparatus used in.	Feb. 28, 1865.
46,595	Somes, Daniel E	Washington, D. C	Houses, preserving houses, packing houses, refrigerators, and other similar structures, cooling.	Feb. 28, 1865.
46,596	Somes, Daniel E	Washington, D. C	Dwellings, churches, hospitals, theatres, and other buildings, cooling and ventilating.	Feb. 28, 1865.
46,950	Somes, Daniel E	Washington, D. C	Granaries and other buildings, cooling, drying, and ventilating.	Mar. 21, 1865.
48,456	Somes, Daniel E	Washington, D. C	Buildings and chambers, mode of cooling air in	June 27, 1865.
48,457	Somes, Daniel E	Washington, D. C	Ships and other vessels, mode of cooling and ventilating	June 27, 1865.
50,286	Somes, Daniel E	Washington, D. C	Air, process for cooling	Oct. 3, 1865.
50,399	Somes, Daniel E	Washington, D. C	Water in wells, mode of cooling	Oct. 10, 1865.
51,236	Somes, Daniel E	Washington, D. C	Heating, cooling, and ventilating, apparatus for	Nov. 28, 1865.
51,237	Somes, Daniel E	Washington, D. C	Air, mode of cooling	Nov. 28, 1865.
1,909	Somes, Daniel E	Washington, D. C	Rooms, cases, &c., for preserving and transporting articles of food and other substances, construction of. (Reissue.)	Mar. 21, 1865.
2,096	Somes, Daniel E., assignor through mesne assignments to himself.	Washington, D. C	Provisions, curing (Reissue)	Oct. 24, 1865.
	Sommercorn, Edward R. (*See* Henze, Gustave, assignor.)			
	Southwick, O. M. (*See* St. John, Cornelius, assignor.)			
46,613	Southworth, Daniel H., assignor to self, B. Lorillard, and C. Ferris.	New York, N. Y	Telegraph cables	Feb. 28, 1865.
50,400	Southworth, Israel H	Essex, Conn	Combs	Oct. 10, 1865.
50,317	Spannagel, Charles	Prussia	Skirt-lining and binding, fabric for	Oct. 3, 1865.
49,931	Spannagel, G. R	St. Louis, Mo	Boilers, composition for preventing incrustation	Sept. 12, 1865.
46,951	Sparks, Reabun	Buffalo, N. Y	Saws, machines for separating	Mar. 21, 1865.
49,932	Sparks, William	New York, N. Y	Coal screen. (Antedated September 6, 1865)	Sept. 12, 1865.
	Spalding, Jacob F., and Roger W. Porter. (*See* Porter & Spalding.)			
50,745	Sparrero, John	Portland, Me	Shafting, box for	Oct. 31, 1865.
46,153	Spaulding, Alfred F., and Salmon M. Scott	Winchendon, Mass	Meat-chopping machine	Jan. 31, 1865.
48,734	Spaulding, Alfred F., and Salmon M. Scott	Winchendon, Mass	Meat chopper	July 11, 1865.
46,717	Spaulding, E. P	St. Louis, Mo	Casks, machines for making heads of	Mar. 7, 1865.
46,034	Spaulding, Henry C	New York, N. Y	Cartridges, metallic	Jan. 24, 1865.
	Spaulding, J. D. (*See* Coffin, David N. B., assignor.)			
49,566	Spaulding, William W	Galesburg, Ill	Mop head	Aug. 22, 1865.
	Spaulding, Wm. W., and Alonzo T. Boon. (*See* Boon & Spaulding.)			
47,173	Speakman, Thomas S	Camden, N. J	Lamp for burning oil	Apr. 4, 1865.
51,094	Speakman, Thomas S., and Noah Hand	Camden, N. J	Pumps, ships'	Nov. 21, 1865.
49,165	Spear, James	Philadelphia, Pa	Stoves, coal	Aug. 1, 1865.
51,238	Spellerburg, Edward	Philadelphia, Pa	Arms, artificial	Nov. 28, 1865.
	Spencer, A. D., and Wm. H. Stanton. (*See* Stanton & Spencer.)			
58,597	Spencer, Basil	Lewisburg, Pa	Straw-cutters	July 4, 1865.
45,952	Spencer, C. M., assignor to Spencer Repeating Rifle Company	Boston, Mass	Fire-arms, self-loading	Jan. 17, 1865.

50,640	Spencer, E	Philadelphia, Pa	Sifter, flour	Oct. 24, 1865.
	Spencer, Halland H., and Samuel Lenher. (*See* Lenher & Spencer.)			
49,042	Spencer, Isaac H., assignor to self and Andrew R. Slade	Pawtucket, R. I	Files, machine for grinding	July 25, 1865.
49,954	Spencer, James E., and Edwin Want, assignor to James E. Spencer.	New Haven, Conn	Spectacle frames, manufacture of	Sept. 12, 1865.
	Spencer, J. H. (*See* Rowbotham, John, assignor.)			
47,873	Spencer, Robert	New York, N. Y	Ores, apparatus for treating	May 23, 1865.
47,874	Spencer, Robert	New York, N. Y	Ores, apparatus for treating	May 23, 1865.
2,021	Spencer, Robert	New York, N. Y	Furnaces for decomposing and desulphurizing ores. (Division A of reissue.)	July 4, 1865.
2,022	Spencer, Robert	New York, N. Y	Ores, method of decomposing and desulphurizing. (Division B of reissue.)	July 4, 1865.
48,108	Spencer, Samuel	Groton, N. Y	Threshing machine	June 6, 1865.
	Spencer, Wm. W., and James Murdoek, jr. (*See* Murdoek & Spencer.)			
	Spendelow, Henry, *et al.* (*See* Milson, Spendelow & Watson.)			
50,746	Spengler, Henry	Philadelphia, Pa	Valves, slide	Oct. 31, 1865.
46,718	Sperry, T. S	New York, N. Y	Skirt wire, manufacture of	Mar. 7, 1865.
47,343	Sperry, T. S	New York, N. Y	Wire, machine for covering	Apr. 18, 1865.
45,941	Spirgle, John M	Philadelphia, Pa	Condensers	Jan. 17, 1865.
51,362	Spirgle, John M	Philadelphia, Pa	Boiler-flues, instrument for cleaning	Dec. 5, 1865.
48,849	Spink, Morris A	De Kalb, N. Y	Stubble coulters	July 18, 1865.
50,179	Spinny, George	Saugus, Mass	Beehives	Sept. 26, 1865.
51,095	Spitzli, J. G	Millville, Mass	Looms for weaving embroidered fabrics	Nov. 21, 1865.
	Splitdorf, Henry, and James J. Clark. (*See* Clark & Splitdorf.)			
46,400	Spofford, Charles, and W. S. Bell, jr	Boston, Mass	Collars, paper, machine for stretching	Feb. 14, 1865.
49,567	Spooner, Charles M	New Bedford, Mass	Composition for coating ship bottoms	Aug. 22, 1865.
50,180	Sprague, E	Schenectady, N. Y	Soap composition	Sept. 26, 1865.
	Sprague, J. A., and Charles Tinker. (*See* Tinker & Sprague.) Reissue.			
46,719	Sprague, Leonard A	New York, N. Y	Buckle lever	Mar. 7, 1865.
47,047	Sprague, Orlando	Fulton, Ill	Beehives	Mar. 28, 1865.
47,230	Sprague, William H	Boston, Mass	Signal frames	Apr. 11, 1865.
49,799	Spratt, William S	West Manchester, Pa	Ploughs	Sept. 5, 1865.
	Spring Perch Company. (*See* Gray & Curtis, assignors.)			
50,401	Springer, Ezra	Davis, Ill	Washing and wringing machines	Oct. 10, 1865.
45,942	Sprout, Aried B	Hughesville, Pa	Rakes, horse	Jan. 17, 1865.
48,109	Sprout, Aried B	Hughesville Pa	Rakes, horse	June 6, 1865.
49,800	Sprout, Aried B	Hughesville, Pa	Rake, horse, teeth	Sept. 5, 1865.
1,978	Sprout, Aried B	Hughesville, Pa	Rakes, horse (Reissue)	May 30, 1865.
2,032	Sprout, Aried B	Hughesville Pa	Rakes, horse (Reissue)	July 18, 1865.
46,720	Squire, John C	Windsor Locks, Conn	Jars, fruit	Mar. 7, 1865.
50,181	Squire, John J	New London, Conn	Jars, fruit	Sept. 26, 1865.
46,827	Squires, Edwin G	Lima, N. Y	Writing, instrument for training the muscles in	Mar. 14, 1865.
46,828	Stabler, Edward	Sandy Springs, Md	Fire-arms, magazine	Mar. 14, 1865.
1,965	Stabler, Edward	Sandy Springs, Md	Fire-arms, magazine	Mar. 14, 1865.
50,965	Stabler, Francis	Baltimore, Md	Preserving animal and vegetable substances, process for	Nov. 14, 1865.
	Stachelin, Martin, and Henry Young. (*See* Young & Stachelin.)			
50,182	Stackpole, William	Brooklyn, N. Y	Meridian finders	Sept. 26, 1865.
1,985	Staey, Charles L	Cincinnati, Ohio	Hydrants	June 6, 1865.
	Stacy, Eli T. (*See* Richardson, Nathan, assignor.)			

List of patentees of inventions, designs, and reissues, 1865—Continued.

No	Patentee.	Residence.	Invention or discovery.	Date.
	Staehlen, Wm., and R. Boeklen. (*See* Boeklen & Staehlen.)			
46,506	Stafford, Charles W	Old Saybrook, Conn	Ordnance, construction of	Feb. 21, 1865.
46,721	Stafford, Nelson	Brooklyn, N. Y	Locks	Mar. 7, 1865.
	Stafford, Nelson. (*See* Harold, Thomas George, assignor.)			
50,183	Stager, Henry E	Milwaukee, Wis	Oil-ejecting caps	Sept. 26, 1865.
49,313	Stanbro, Samuel	Northville, Mich	Fence	Aug. 8, 1865.
50,852	Stanbrough, James	Newark, N. J	Buckles	Nov. 7, 1865.
	Standish, L. F., *et al.* (*See* Tyler, Chandler & Standish.)			
49,933	Stantely, Daniel, and George Johnson	Cincinnati, Ohio	Boring machines	Sept. 12, 1865.
47,996	Stantley, Henry	Troy, N. Y	Diggers, rotary	May 30, 1865.
47,665	Stantley, J. N	Brooklyn, N. Y	Brick and pottery-ware, kiln for burning	May 9, 1865.
	Stantley Rule and Level Co. (*See* Fraust, Justus A., assignor.)			
	Stantley, Thomas B., and James W. Weston. (*See* Weston & Stantley.)			
50,505	Stannard, Albert A	Ithaca, N. Y	Collars, horse	Oct. 17, 1865.
49,003	Stansburg, A. D	Cross Creek Township, W. Va.	Racks, sheep	July 25, 1865.
	Stansbury, Charles F. (*See* Young, Wm., assignor.)			
50,184	Stansfield, John	Brooklyn, N. Y	Cement	Sept. 26, 1865.
	Stanton, H. B., *et al.* (*See* Arnold, Alfred, assignor.)			
	Stanton, Samuel, *et al.* (*See* Turrell, Stanton & Ward.)			
50,966	Stanton, William H., and A. D. Spencer	Dunmore, Pa	Engines, steam, valve gear for	Nov. 14, 1865.
1,986	Staples, Robert H	Lowell, Mass	Chair, spring-back (Reissue)	June 6, 1865.
49,453	Starbuck, James C	Cambridge, Mass	Tree protector	Aug. 15, 1865.
46,952	Starbuck, N	Wilmington, Ohio	Churn dashers	Mar. 21, 1865.
49,166	Starbuck, N	Wilmington, Ohio	Ditching machine	Aug. 1, 1865.
49,568	Stark, Andrew	Topeka, Kansas	Bedstead	Aug. 22, 1865.
47,997	Stark, John	Waltham, Mass	Lathe	May 30, 1865.
2,233	Starkey, George	New York, N. Y	Statuette (Design)	Dec. 12, 1865.
51,628	Starr, Eben T	New York, N. Y	Fire-arms, revolving	Dec. 19, 1865.
51,629	Starr, Eben T	New York, N. Y	Gun locks	Dec. 19, 1865.
49,314	Starr, Jesse H	Middlebush, N. Y	Bee separators	Aug. 8, 1865.
46,953	Starrett, L. Roy S	Newburyport, Mass	Butter worker	Mar. 21, 1865.
47,875	Starrett, L. Roy S	Newburyport, Mass	Meat cutter	May 23, 1865.
48,458	Starrett, L. Roy S	Newburyport, Mass	Washing machine	June 27, 1865.
45,872	Statler, C. V	Wataga, Ill	Tire, device for shrinking	Jan. 10, 1865.
50,747	Staub, Mathias	Philadelphia, Pa	Chucks	Oct. 31, 1865.
45,762	Staunton, J. Galusha	Buffalo, N. Y	Preserving organic substances, process of. (Antedated April 3, 1862.)	Jan. 3, 1865.
45,763	Staunton, J. Galusha	Buffalo, N. Y	Preserving butter and other substances, vessels for. (Antedated April 3, 1862.)	Jan. 3, 1865.
45,764	Staunton, J. Galusha	Buffalo, N. Y	Preserving animal and vegetable substance during transportation, cases for. (Antedated May 5, 1863.)	Jan. 3, 1865.
45,765	Staunton, J. Galusha	Buffalo, N. Y	Preserving fruits, meats, fish, &c. (Antedated May 18, 1863)	Jan. 3, 1865.
45,766	Staunton, J. Galusha	Buffalo, N. Y	Boxes, cases, &c., air-tight. (Antedated May 18, 1863)	Jan. 3, 1865.
51,630	Steadman, J	Pecatonica, Ill	Punching machine	Dec. 19, 1865.

2,009	Steadman, Thomas S., assignor to Wm. N. Whiteley, jr	Springfield, Ohio	Harvesters, clover and grass seed (Reissue)	June 20, 1865.
	Steam Stoneeutter Co. (*See* Wardwell, Geo. J., ass'r.) Reissue.			
	Steam Stonecutter Co. (*See* Wardwell, Geo. J., ass'r.) Reissue.			
	Steam Stoneeutter Co. (*See* Wardwell, Geo. J., ass'r.)			
	Steam Stoneeutter Co. (*See* Wardwell, Geo. J., ass'r.)			
	Steam Stoneeutter Co. (*See* Wardwell, Geo. J., ass'r.)			
50,992	Stearn, Caleb S., and Thomas Corey, assignors to selves and Samuel Boyd.	Marlboro, Mass	Buckle	Nov. 14, 1865.
48,319	Stearns, Frank M	Berea, Ohio	Grindstones, mode of paeking	June 20, 1865.
2,102	Stearns, Frederiek	Detroit, Mieh	Trade mark (Design)	June 20, 1865.
2,043	Stearns, George A	Roehester, N. Y	Telegraphs, lightning arresters for (Reissue)	Aug. 1, 1865.
48,110	Steadman, Albert	Homer, N. Y	Tire, upsetting	June 6, 1865.
	Steele, D. S., and W. Condiet. (*See* Stevens, Wm. J., assignor.) Reissue.			
47,684	Steele, John, ass'r to self, Lauren C. Woodruff, and Corydon Karr.	Buffalo, N. Y	Clay, damp, mode of pressing	May 9, 1865.
2,207	Steffe, Jaeob	Philadelphia, Pa	Stove (Design)	Oct. 17, 1865.
2,170	Steffe, Jaeob, assignor to Cox, Whiteman & Cox	Philadelphia, Pa	Stove (Design)	Sept. 12, 1865.
	Stein, E. F. and W. A., and G. W. Doty. (*See* Doty & Stein.)			
47,666	Stein. Miehael Joseph	New York, N. Y	Sewing machine	May 9, 1865.
48,735	Steinbaeh, A	Evansville, Ind	Collar, horse, fasteners	July 11, 1865.
46,722	Steiner, Jaeob S	St. Louis, Mo	Sewing maehines, binding attaehment for	Mar. 7, 1865.
49,207	Steinmetze, Bernard	Franee	Loek for satehel	Aug. 1, 1865.
47,048	Stelle, Arold F	Crossingville, Conn	Propeller pole	Mar. 28, 1865.
45,873	Stell, David D	New Brunswiek, N. J	Weighing buekets. (Antedated November 14, 1862)	Jan. 10, 1865.
46,597	Stephens, Anson P	Brooklyn, N. Y	Grinder, pereussion	Feb. 28, 1865.
46,829	Stephens, Edward J., and Hiram E. Green	Pawtueket, R. I	Printing yarn, maehine for	Mar. 14, 1865.
49,801	Stephenson, Albert	St. Louis, Mo	Hydrants	Sept. 5, 1865.
47,465	Stephenson, Henry W	Cineinnati, Ohio	Barrel-eooling maehine	Apr. 25, 1865.
48,736	Stephenson, Isaac	Marranett, Wis	Sleighs	July 11, 1865.
47,998	Stephenson, James	Canandaigua, N. Y	Time-keepers	May 30, 1865.
49,004	Stephenson, John	New York, N. Y	Cars, railroad, running gear of	July 25, 1865.
49,005	Stephenson, John	New York, N. Y	Axle box	July 25, 1865.
	Stephenson, Thos., and David Clark. (*See* Clark & Stephenson.)			
	Stetson, George R., and Darwin Ellis. (*See* Ellis & Stetson.)			
49,167	Stetson, Thomas D	New York, N. Y	Glass window	Aug. 1, 1865.
	Steveley, Andrew, and Stephen F. Bishop. (*See* Bishop & Steveley.)			
	Steveley, Andrew, and Stephen F. Bishop. (*See* Bishop & Steveley.)			
	Steveley, Andrew, and Stephen F. Bishop. (*See* Bishop & Steveley.)			
	Steveley, Andrew, and Stephen F. Bishop. (*See* Bishop & Steveley.)			
46,723	Stevens, A. J	San Franeiseo, Cal	Piston paeking	Mar. 7, 1865.
	Stevens, Charles L., and Alonzo T. Boon. (*See* Boon & Stevens.)			
50,506	Stevens, Collins	Boston, Mass	Air engines, hot	Oet. 17, 1865.
	Stevens, E. M., *et al.* (*See* Weed, Samuel S., assignor.)			
	Stevens, Franeis A	Chicago, Ill	Car-breakers, railroad (Extension)	Nov. 23, 1865.
	Stevens, Henry R., and Manley Howe. (*See* Howe & Stevens.) Reissue.			
	Stevens, Henry R., and Manley Howe. (*See* Howe & Stevens.) Reissue.			

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
45,767	Stevens, James H	East Durham, N. Y	Manure, device for spreading	Jan. 3, 1865.
49,006	Stevens, James H	East Durham, N. Y	Wagons, unloading, attachment for	July 25, 1865.
2,097	Stevens, John	New York, N. Y	Shirt-bosom folders (Reissue)	Oct. 24, 1865.
48,032	Stevens, John, assignor to self and Theodore Bourne	New York, N. Y	Gins, cotton	May 30, 1865.
48,850	Stevens, John W	South Danvers, Mass	Steam blowers	July 18, 1865.
45,874	Stevens, Judd	Marengo, N. Y	Sleds	Jan. 10, 1865.
51,239	Stevens, Martin W	Stoughton, Mass	Sewing machines, embroidering attachment for	Nov. 28, 1865.
48,851	Stevens, Nathan P	Boston, Mass	Engines, steam, pistons for	July 18, 1865.
1,923	Stevens, Oliver P	Cleveland, Ohio	Hulling and scouring machines (Reissue)	Mar. 28, 1865.
	Stevens, Simon. (*See* Simpson, Edwin L., assignor.)			
	Stevens, Simon. (*See* Simpson, Edwin L., assignor.)			
	Stevens, Simon. (*See* Simpson, Edwin L., assignor.)			
	Stevens, Simon. (*See* Simpson, Edwin L., assignor.)			
1,957	Stevens, Wm. J., assignor through mesne assignments to N. W. Condict and D. S. Steele.	Jersey City, N. J	Engines, steam, means of operating the valves of (Reissue)	May 16, 1865.
2,036	Stevens, Wm. W., assignor to N. P. Richardson & Co	Portland, Me	Stove, cook, plates of a (Design)	Feb. 28, 1865.
48,737	Stevenson, J. E	New York, N. Y	Water-wheels	July 11, 1865.
46,598	Stewart, John D	Baltimore, Md	Pipe, smoking	Feb. 28, 1865.
48,320	Stewart, John D	Baltimore, Md	Tobacco pipes	June 20, 1865.
	Stewart, J. J., and John A. Roche. (*See* Roche & Stewart.)			
47,049	Stewart, Philo P	Troy, N. Y	Stoves, furnaces, &c., fire pot for	Mar. 28, 1865.
48,143	Stewart, Philo P	Troy, N. Y	Stoves, coal	June 6, 1865.
2,023	Stewart, Philo P	Troy, N. Y	Stoves, coal (Reissue)	July 4, 1865.
45,876	Stewart, Robert	Fultonham, N. Y	Water-wheels	Jan. 10, 1865.
46,724	Stewart, Robert	Brooklyn, N. Y	Filtering liquids, &c., apparatus for	Mar. 7, 1865.
	Stewart, Samuel M., and Robert Perrine. (*See* Perrine & Stewart.)			
45,768	Stiastny, Leonard T	Hoboken, N. J	Wool, refuse, for use, process for preparing	Jan. 3, 1865.
	Stiastny, Leonard J. (*See* Kirchhof, Charles, assignor.)			
2,031	Stickney, F. H	East Cambridge, Mass	Burial cases (Design)	Feb. 14, 1865.
46,401	Stiles, Edwin C	Portland, Me	Milling machine	Feb. 14, 1865.
2,139	Stiles, Norman C	Meriden, Conn	Press, punching (Reissue)	Dec. 26, 1865.
51,522	Stillman, C. A., assignor to C. B. Cottre and N. Babcock	Westerley, R. I	Pumps	Dec. 12, 1865.
50,507	Stillman, James	Springfield, Mass	Fire-arms, breech-loading	Oct. 17, 1865.
48,321	Stillman, O. M	Westerley, R. I	Engines, steam	June 20, 1865.
50,748	Stillson, Daniel C., and John C. Chapman	Charlestown, Mass	Tongs, pipe	Oct. 31, 1865.
	Stillwell, Chas. B., and Herman M. Shaw. (*See* Shaw & Stillwell.)			
	Stillwell, J., *et al.* (*See* Wheeler, S. H., assignor.)			
	Stillwell, J. T., *et al.* (*See* Wheeler, S. H., assignor.)			
49,007	Stimpson, James	Baldwinsville, Mass	Bracket, clothes	July 25, 1865.
	Stine, S. J., *et al.* (*See* Scanlon, James, assignor.)			
49,802	St. John, B. F	Shelbyville, Ind	Levels, pendulum	Sept. 5, 1865.
50,508	St. John, B. F., and Henry Horst	Shelbyville, Ind	Brick and tile machine	Oct. 17, 1865.
50,509	St. John, Cornelius	Boston, Mass	Lamp shade	Oct. 17, 1865.
48,632	St. John, C., ass'r, through mesne assignments, to Chas. C. Beers	Boston, Mass	Lamp shade	July 4, 1865.
			Lamp, holder for	Feb. 21, 1865.

	St. John, Edgar, *et al.* (*See* Monroe, Stone & St. John.)			
49,008	St. John, Garland B	Kalamazoo, Mich	Cultivators	July 25, 1865.
50,967	St. John, R. H	Bellefontaine, Ohio	Wells, method of sinking	Nov. 14, 1865.
51,096	St. John, W. W	St. Louis, Mo	Cultivators	Nov. 21, 1865.
49,315	Stock, John	New York, N. Y	Cameras, photographic	Aug. 8, 1865.
	Stockise, Abner C. (*See* Whitney & Hardison, assignors.)			
50,287	Stockton, Job B	Oil City, Pa	Tools, boring, coupling for shafts of	Oct. 3, 1865.
47,050	Stockton, Thomas	North Chenango, Pa	Dough, apparatus for raising	Mar. 28, 1865.
48,459	Stockwell, Henry B	Brooklyn, N. Y	Lighter, gas, fulminate. (Antedated June 17, 1865)	June 27, 1865.
48,460	Stockwell, Henry B	Brooklyn, N. Y	Compound, fulminating. (Antedated June 17, 1865)	June 27, 1865.
45,769	Stoddard, Joshua C	Worcester, Mass	Rakes, horse	Jan. 3, 1865.
45,876	Stoffel, Ignatius	Washington, D. C	Arms, artificial	Jan. 10, 1865.
48,219	Stoker, H. M	Watson, Ill	Pumps, submerged	June 13, 1865
48,220	Stoker, H. M	Watson, Ill	Pumps, submerged	June 13, 1865.
49,009	Stokes, Benjamin S	Manchester, N. H	Crucible for metallic baths	July 25, 1865.
50,425	Stoliker, Joseph, assignor to self and J. W. McKenzie	Pine Run, Mich	Wheels	Oct. 10, 1865.
	Stoll, H. C., *et al.* (*See* Garnell, Bez & Stott.)			
50,853	Stone, A. C	Steeleville, Pa	Rakes, horse	Nov. 7, 1865.
51,097	Stone, A. C	Steeleville, Pa	Rakes, horse. (Antedated November 13, 1865)	Nov. 21, 1865.
51,489	Stone, B. L	New York, N. Y	Alarm, burglar	Dec. 12, 1865.
46,402	Stone, Bernhard L	San Francisco, Cal	Alarm, burglar	Feb. 14, 1865.
46,035	Stone, D. C	Kingston, N. Y	Mill-stone pick	Jan. 24, 1865.
	Stone, E., *et al.* (*See* Monroe, Stone & St. John.)			
49,316	Stone, Edward E	U. S. Navy	Hooks, elastic, mousing for	Aug. 8, 1865.
46,154	Stone, George	Boston, Mass	Spikes, tool for drawing	Jan. 31, 1865.
46,830	Stone, Gustavus, and Joseph P. Bullock	Beloit, Wis	Harvesters	Mar. 14, 1865.
50,047	Stone, Isaac H	St. Louis, Mo	Tobacco, baling, apparatus for packing	Sept. 19, 1865.
	Stone, James B. (*See* Norman, William, assignor.)			
2,226	Stone, J. H	Philadelphia, Pa	Vessels, water, sheet metal base of (Design)	Dec. 5, 1865.
47,667	Stone, J. M	North Andover, Mass	Drawing frame rolls	May 9, 1865.
46,278	Stone, J. M., assignor to self, Geo. L. Davis, and J. A. Wiley	North Andover, Mass	Eccentric adjustment	Feb. 7, 1865.
47,876	Stone, J. M., assignor to self, Geo. L. Davis, and J. A. Wiley	North Andover, Mass	Fastening, lath	May 23, 1865.
50,641	Stone, Othniel	Rochester, N. Y	Diseases by condensed air, treating	Oct. 24, 1865.
	Stone, Paschal, and Francis D. Hayward. (*See* Hayward & Stone.)			
46,279	Stone, Samuel S	Troy, N. Y	Collar, paper, button-hole punchers	Feb. 7, 1865.
2,024	Stone, Samuel S	Troy, N. Y	Button-holes, incising and embossing, and printing articles of wearing apparel, machine for. (Reissue.)	July 4, 1865.
47,581	Stone, William H	Brooklyn, N. Y	Barrels, petroleum, lining for	May 2, 1865.
48,852	Stoops, Nesbitt D	Newark, N. J	Sewing machines, carriages and caster for	July 18, 1865.
50,402	Stoops, Nesbitt D	Newark, N. J	Caster for sewing machines	Oct. 10, 1865.
	Storer, Jacob J., and J. D. Whelpley. (*See* Whelpley & Storer.)			
	Storer, Jacob J., and J. D. Whelpley. (*See* Whelpley & Storer.)			
	Storer, Jacob J., and J. D. Whelpley. (*See* Whelpley & Storer.)			
	Storer, Jacob J., and J. D. Whelpley. (*See* Whelpley & Storer.)			
48,494	Storm, William Mont, assignor to self and C. J. Ferguson	Harlem, N. Y	Spikes, railroad	June 27, 1865.
48,777	Storm, William Mont, assignor to self and R. C. Mitchell	New York, N. Y	Engines, steam	July 11, 1865.
49,199	Storm, William Mont, assignor to self and R. C. Mitchell	New York, N. Y	Boilers, steam	Aug. 1, 1865.
51,098	Story, Ira C	Cincinnati, Ohio	Locomotives, street, running gear of	Nov. 21, 1865.
	Stout, A. L., assignor. (*See* Roberts, Elijah, assignor.) Reissue.			
46,954	Stovel, George	Chicago, Ill	Gates	Mar. 21, 1865.
50,510	Stover, H. D	New York, N. Y	Lathes, stands for	Oct. 17, 1865.
	Stow, Enos E., and James F. Brewer. (*See* Brewer & Stow.)			

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Stow, John E. (*See* Holden, Henry, assignor.)			
48,598	Stow, O. W	Plantsville, Conn	Sausage filler	July 4, 1865.
51,240	Stow, Orson W	Plantsville, Conn	Stove-pipe elbow	Nov. 28, 1865.
46,725	Strange, Emerson C., and George R. Hunley	Staunton, Mass	Furnace, boiler	Mar. 7, 1865.
46,726	Strater, Herman, jr	Boston, Mass	Faucets	Mar. 7, 1865.
46,727	Strater, Herman, jr	Boston, Mass	Faucets	Mar. 7, 1865.
46,728	Strater, Herman, jr	Boston, Mass	Faucets	Mar. 7, 1865.
47,582	Stratton, A. H	New York, N. Y	Fifes and flutes	May 2, 1865.
45,877	Stratton, Charles H	Monroetown, Pa	Digging machine	Jan. 10, 1865.
	Stratton, Henry, and Elliot Savage. (*See* Savage & Stratton.)			
48,461	Stratton, James	Brooklyn, N. Y	Lamps, street	June 27, 1865.
49,010	Stratton, James	Brooklyn, N. Y	Burner, gas, chimney	July 25, 1865.
51,121	Stratton, James, assignor to self and John Hinshillwood	Philadelphia, Pa	Burners, gas	Nov. 21, 1865.
49,955	Stratton, James E., assignor to the Petroleum Vapor Stove and Gas-light Company.	Philadelphia, Pa	Burners, vapor	Sept. 12, 1865.
51,363	Stratton, John F	New York, N. Y	Musical instruments, mute for	Dec. 5, 1865.
49,317	Stratton, Wiley J., and H. G. Tideman	St. Louis, Mo / New York, N. Y	Tobacco, machine for cutting	Aug. 8, 1865.
51,099	Strober, Lewis	Jersey City, N. J	Ointment	Nov. 21, 1865.
49,168	Strode, T. T	Mortonville, Pa	Adding machines	Aug. 1, 1865.
49,169	Strode, T. T	Mortonville, Pa	Clocks, calendar	Aug. 1, 1865.
	Strong, Alvah. (*See* Lamb, Isaac W., assignor.)			
	Strong, B., and M. H. Crosby. (*See* Crosby, Thomas G., ass'r.)			
2,064	Strong, Clark	Chatham, Conn	Coffin handle (Design)	May 9, 1865.
51,490	Strong, Grove F	Onondaga, N. Y	Hay forks, horse	Dec. 12, 1865.
	Strong, G. H., and M. H. Crosby. (*See* Crosby, Thomas G., ass'r.)			
	Strout, Ambrose, and Axel Hayford. (*See* Hayford & Strout.)			
	Struble, O. T., and John W. Simonston. (*See* Simonston & Struble.)			
	Stuart & Peterson, (*See* Howson, Henry, assignor.)			
	Stuart & Peterson. (*See* Martins, John, assignor.)			
	Stuart & Peterson. (*See* Martins, John, assignor.) Design.			
	Stuart & Peterson. (*See* Horton & Martins, assignors.) Design.			
	Stuart & Peterson. (*See* Martins & Currie, assignors.) Design.			
49,663	Stuart, William M	Newark, N. J	Fishing line reel	Aug. 29, 1865.
	Stuber, Jacob, and M. J. Dickinson. (*See* Dickinson & Stuber.)			
2,128	Stuber, J., and F. Frank, assignors to Jonathan Mayhew and Thomas S. Ray.	Buffalo, N. Y	Lamps, locomotive (Reissue)	Dec. 19, 1865.
	Study, William H., *et al.* (*See* Miller, Barnett & Study.)			
51,100	Stufflebeen, James	Milwaukee, Wis	Mortising machines	Nov. 21, 1865.
46,729	Sturtevant, T. L	Boston, Mass	Stove	Mar. 7, 1865.
48,738	Sturtevant, T. L	Boston, Mass	Stoves, coal	July 11, 1865.
50,048	Sturtevant, Thomas L	Boston, Mass	Fire-arms, breech-loading	Sept. 19, 1865.
50,854	Sturtevant, Thomas L	Boston, Mass	Cartridge retractor for breech-loading fire-arms	Nov. 7, 1865.
	Sugden, William J. (*See* Keane, John, assignor.)			
	Sullivan, George S. (*See* Carey, Augustus C., assignor.)			

	Sullivan, J. N. (*See* Wheeler, S. H., assignor.)			
	Sullivan, J. N. (*See* Wheeler, S. H., assignor.)			
2,023	Sullivan, Julius L. D	Somerville, Mass	Spoon and fork handle (Design)	Feb. 21, 1865.
47,877	Summerfield, Thomas	New York, N. Y	Barrels, method of securing bushes for bungs to	May 23, 1865.
	Sumner, C., and B. R. Jenkins. (*See* Millett, John W., assignor.)			
	Sumner, James D. (*See* Walcott, Henry S., assignor.)			
51,759	Supplee, Jonathan R., and Robert K. Wright	Philadelphia, Pa	Low-water detectors	Dec. 26, 1865.
	Surbrug, Samuel. (*See* Lamb, George A., assignor.)			
47,137	Sutherland, James	New York, N. Y	Propellers, manufacture of	Apr. 4, 1865.
47,344	Sutton, N	Detroit, Mich	Pumps. (Antedated April 3, 1865)	Apr. 18, 1865.
46,866	Sutvan, Isaac, assignor to Barton H. Jenks	Bridesburg, Pa	Fire-arms, breech-loading	Mar. 14, 1865.
	Swain, C. F., and William Workman. (*See* Workman & Swain.)			
45,798	Swain, Thomas, assignor to self, E. B. Alvord, A. W. Field, and J. Coburn.	Manlius, N. Y	Reaping and mowing machines	Jan. 3, 1865.
48,599	Swartz, Samuel	Buffalo, N. Y	Wells, artesian, packing for	July 4, 1865.
46,155	Sweeney, Peter	New York, N. Y	Corn-sheller	Jan. 31, 1865.
50,511	Sweet, Allan S., jr	Detroit, Mich	Metals by steam heat, expanding	Oct. 17, 1865.
	Sweet, George C., and John Jennings. (*See* Jennings & Sweet.)			
2,227	Sweet, Greenleaf L	Leominster, Mass	Trade mark (Design)	Dec. 5, 1865.
45,878	Sweet, William A	Syracuse, N. Y	Ovens for converting iron into steel	Jan. 10, 1865.
48,739	Sweet, William A	Syracuse, N. Y	Furnace for melting metals	July 11, 1865.
50,185	Sweetland, Albert C	North Attleboro', Mass	Buttons, dies for making	Sept. 26, 1865.
48,600	Sweetland, J. B	Pontiac, Mich	Horse powers	July 4, 1865.
51,491	Sweetland, J. B., and E. C. Goodrich	Pontiac, Mich	Basket machines. (Antedated December 5, 1865)	Dec. 12, 1865.
	Swenson, Paul. (*See* Bradfield, Charles, assignor.)			
	Swift, A. E., *et al.* (*See* Hurd, Daniel, assignor.)			
47,466	Swing, James H	Cleveland, Ohio	Pot, coffee	Apr. 25, 1865.
	Swope, Peter, and Tridolin Smith. (*See* Smith & Swope.)			
50,749	Sykes, Chester W	Suffield, Conn	Ploughs	Oct. 31, 1865.
	Sylvester, Charles F., and John Brooks. (*See* Brooks & Sylvester.)			
2,033	Sylvester, Samuel R	Washington, D. C	Soda fountains	July 18, 1865.
46,730	Symonds, Dexter	Lowell, Mass	Lamps	Mar. 7, 1865.
50,512	Symonds, Thomas	Portland, Me	Ice-creeper	Oct. 17, 1865.
51,241	Symonds, Thomas	Portland, Me	Calk, heel	Nov. 28, 1865.
51,242	Symonds, Thomas	Portland, Me	Calk, toe	Nov. 28, 1865.
46,614	Taber, Wing H., assignor to self and Thomas H. Abbott	Lowell, Mass	Planes, bench	Feb. 28, 1865.
45,770	Taft, Horatio N	Washington, D. C	Pen rack, calendar, and letter balance, combination of. (Antedated November 27, 1864.)	Jan. 3, 1865.
	Taft, John R. (*See* Bromwick, Charles M., assignor.)			
48,601	Taft, Owen W	New York, N. Y	Skates	July 4, 1865.
51,492	Taft, Owen W	New York, N. Y	Skates, heater for	Dec. 12, 1865.
49,454	Taggart, Byron R	Watertown, N. Y	Paper bags, apparatus for making	Aug. 8, 1865.
48,495	Taggart, F. L., S. Chichester, and C. W. Mills, assignors to G. H. Nichols.	Brooklyn, N. Y	Elevators, grain. (Antedated June 12, 1865)	June 27, 1865.
	Tagliabu, Giuseppe. (*See* Boyle, Robert, assignor.)			
47,345	Tainter, Daniel	Worcester, Mass	Carding machines	Apr. 18, 1865.
47,668	Tainter, Daniel	Worcester, Mass	Carding machines	May 9, 1865.
51,760	Talbot, George	New York, N. Y	Water wheels, turbine	Dec. 26, 1865.
48,322	Tallman, William	Manteno, Ill	Gates	June 20, 1865.
46,831	Talmadge, James B	Winsted, Conn	Cars, railroad, ventilating apparatus for	Mar. 14, 1865.
47,878	Talpey, Joseph A	Somerville, Mass	Hoisting apparatus	May 23, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
51,761	Talpey, Joseph A.	Somerville, Mass	Sawing machines, scroll	Dec. 27, 1865.
49,318	Taltavull, Peter	Washington, D. C	Steam, blowing off	Aug. 8, 1865.
51,493	Tapper, William	New York, N. Y	Trap, bedbug	Dec. 12, 1865.
46,403	Tarbox, Asahel	Willimantic, Conn	Water elevators	Feb. 14, 1865.
47,669	Tarbox, J. L	New Orleans, La	Sign, illuminated	May 9, 1865.
49,803	Tarbox, John N	Buffalo, N. Y	Sewing machines	Sept. 5, 1865.
47,879	Tarr, J. B	Chicago, Ill	Ship and other navigable vessels, keel for	May 23, 1865.
48,221	Tarr, James G., and Augustus H. Wonson	Gloucester, Mass	Paint for ships' bottoms	June 13, 1865.
48,323	Tarr, James G., and Augustus H. Wonson	Gloucester, Mass	Paint for the bottoms of ships	June 20, 1865.
	Tate, J. F., jr., and William Bamford. (*See* Bamford & Tate.)			
	Tatham, William P. (*See* Fowler, John, jr., assignor.)			
	Tattershall, Richard, and Salmon E. Tyler. (*See* Tyler & Tattershall.)			
50,513	Taylor, Alfred	Philadelphia, Pa	Collars, cuffs, &c., manufacture of	Oct. 17, 1865.
	Taylor, Amos A. (*See* Read, Daniel, assignor.)			
47,467	Taylor, Charles N., and Elijah J. Holmes	Upton, Mass / Dedham, Mass	Forges	Apr. 25, 1865.
50,049	Taylor, David C	Goshen, N. Y	Compound, lubricating	Sept. 19, 1865.
46,731	Taylor, E. B	Natick, Mass	Clothes-dryer	Mar. 7, 1865.
45,879	Taylor, George G., assignor to self, Thomas H. Dodge, and A. Brown.	Worcester, Mass	Harvesting machines, method of manufacturing cutter-bars for	Jan. 10, 1865.
49,804	Taylor, John	Lawrence, Mass	Printer's blanket	Sept. 5, 1865.
	Taylor, J. Horace. (*See* Wendell, George S., assignor.)			
48,462	Taylor, John S. P	Oxford, Ohio	Carbine socket	June 27, 1865.
49,170	Taylor, Joseph R., and Horace H. Towne	Centralia, Ill	Boilers, steam, closing hand-hole plates in	Aug. 1, 1865.
	Taylor, Samuel, and John Petrie, jr. (*See* Petrie & Taylor.)			
50,186	Taylor, S. C	Monroe, Mich	Dentures, artificial	Sept. 26, 1865.
47,231	Taylor, Thomas	Washington, D. C	Shells, explosive, fuse hood for	Apr. 11, 1865.
	Taylor, V. N., *et al.* (*See* Hutchinson, S. B., assignor.)			
	Taylor, V. N., and G. W. Ray. (*See* Hook, Albert H., assignor.) Reissue.			
	Taylor, V. N., and G. W. Ray. (*See* Hook, Albert H., assignor.) Reissue.			
50,886	Taylor, William	East Zora, Canada	Carriage springs	Nov. 7, 1865.
46,507	Taylor, William B. S	New York, N. Y	Gas, illuminating, flexible tubing for	Feb. 21, 1865.
48,324	Teasdale, H. M	Dansville, N. Y	Cultivators	June 20, 1865.
50,514	Tebbetts, Temple	New York, N. Y	Collars, paper, cards, &c., from the printing or embossing press, removing.	Oct. 17, 1865.
	Teel, William, *et al.* (*See* Choate, William, assignor.)			
48,602	Tempest, James R	Philadelphia, Pa	Keys, lock, device for fastening	July 4, 1865.
49,569	Temple, Alonzo	Bridgeport, Conn	Boilers, composition for preventing and removing incrustation from.	Aug. 22, 1865.
48,325	Temple, C. C	Saco, Me	Looms, cloth, registering attachment for	June 20, 1865
	Temple, J., *et al.* (*See* Robert, Elijah, assignor.) Reissue.			

51,523	Temple, James, assignor to self and H. P. Hottenstein	Selin's Grove, Pa	Railroad tracks, mode of raising	Dec. 12, 1865.
	Terrell, E. P., and T. J. Blackburn. (*See* Blackburn & Terrell.)			
	Terrell, E. C. (*See* French, A. F., assignor.)			
	Terrell, E. C. (*See* French, E. F., assignor.)			
46,280	Terry, John B	Auburndale, Mass	Air, apparatus for carburetting	Feb. 7, 1865.
49,934	Terry, John B	Auburndale, Mass	Air, apparatus for carburetting	Sept. 12, 1865.
48,740	Terry, William E	Wyoming, N. Y	Tanning, process for	July 11, 1865.
47,685	Teter, David B., assignor to self and Samuel C. Dickinson	Batavia Station, Iowa	Spinning machines, hand, mode of adjusting band on	May 9, 1865.
50,642	Tewksbury, A. J	Haverhill, Mass	Sewing machine, device for registering the number of shoes soled by a.	Oct. 24, 1865.
	Thacher, Charles. (*See* Shove, George, assignor.)			
48,136	Thacher, Charles, assignor to self and George Shove	Yarmouth, Mass	Cranberry gatherer	July 4, 1865.
50,643	Thacker, John	New Lexington, Ohio	Wells, artesian, boring apparatus for	Oct. 24, 1865.
50,750	Thackray, George	Mystic Bridge, Conn	Engines, steam, slide-valves for	Oct. 31, 1865.
50,050	Thayer, David N	Mayville, N. Y	Shovel, snow	Sept. 19, 1865.
47,051	Thayer, Eli	Worcester, Mass	Pumps, steam, automatic	Mar. 28, 1865.
47,052	Thayer, Eli	Worcester, Mass	Grate bars for boilers	Mar. 28, 1865.
47,053	Thayer, Eli	Worcester, Mass	Grates, tubular	Mar. 28, 1865.
47,054	Thayer, Eli	Worcester, Mass	Steam generators	Mar. 28, 1865.
47,232	Thayer, Eli	Worcester, Mass	Boiler, steam, sediment-extractor for	Apr. 11, 1865.
49,171	Thayer, Eli	Worcester, Mass	Glass by exposure to heat, method of preventing the breaking of	Aug. 1, 1865.
49,172	Thayer, Eli	Worcester, Mass	Steam generators	Aug. 1, 1865.
50,403	Thayer, R., and J. M. McClelland	Pittsburg, Ind	Cultivators	Oct. 10, 1865.
47,233	Thayer, Francis S	Troy, N. Y	Bolts, flour	Apr. 11, 1865.
	Thieling, John H. (*See* Cajar, Emil, assignor.)			
50,751	Thomas, Alfred V	Frederick, Md	Lock, night, travellers'	Oct. 31, 1865.
50,665	Thomas, Charles H., assignor to self and Hermon Thomas	Milton, N. Y	Presses, cider	Oct. 24, 1865.
48,111	Thomas, George Hayward	New York, N. Y	Carriage axles	June 6, 1865.
47,468	Thomas, James C	Red Point, Md	Planter, corn	Apr. 25, 1865.
46,732	Thomas, I. H., and P. P. Mast	Springfield, Ohio	Seeding machines, attaching drill-teeth to	Mar. 7, 1865.
47,055	Thomas, I. H., and P. P. Mast	Springfield, Ohio	Cultivators	Mar. 28, 1865.
47,138	Thomas, I. H., and P. P. Mast	Springfield, Ohio	Fertilizers, machine for distributing	Apr. 4, 1865.
48,112	Thomas, I. H., and P. P. Mast	Springfield, Ohio	Drills, grain, drag-bars for	June 6, 1865.
50,545	Thomas, I. H., and P. P. Mast	Springfield, Ohio	Drills, grain	Oct. 17, 1865.
51,101	Thomas, I. H., and P. P. Mast	Springfield, Ohio	Mill, cider	Nov. 21, 1865.
51,494	Thomas, I. H., P. P. Mast, and Thomas Harding	Springfield, Ohio	Cultivators	Dec. 12, 1865.
49,173	Thomas, Levi H	Waterbury, Vt	Seed brake	Aug. 1, 1865.
49,174	Thomas, Levi H	Waterbury, Vt	Traps, steel	Aug. 1, 1865.
50,644	Thomas, Lloyd	New Philadelphia, Ill	Sirup boiler and evaporator	Oct. 24, 1865.
46,156	Thomas, N. Spencer	Painted Post, N. Y	Extracts, fluid, concentrated, process for making	Jan. 31, 1865.
49,319	Thomas, N. Spencer	Painted Post, N. Y	Mills, bark	Aug. 8, 1865.
1,966	Thomas, Robert	Buffalo, N. Y	Ship's knee (Reissue)	May 23, 1865.
49,175	Thomas, Robert, and Giles Edwards	Columbiana, Ala	Iron, wrought, manufacture of	Aug. 1, 1865.
47,138	Thomas, William	Ottawa, Ill	Canal lock gates, device for raising	Apr. 4, 1865.
49,455	Thomas, William M	Binghamton, N. Y	Racks, hay, for wagons	Aug. 15, 1865.
46,733	Thomas, William R	Catasauqua, Pa	Piston packing	Mar. 7, 1865.
	Thompson, Albert. (*See* Johnson, Warren, assignor.)			
48,113	Thompson, Edwin, and L. R. Mears	Abington, Mass / Brooklyn, N. Y	Shoes, machine-sewed, manufacture of	June 6, 1865.
2,109	Thompson, Henry G., assignor to the Hartford Carpet Company	New York, N. Y	Carpet pattern (Design)	July 4, 1865.
2,110	Thompson, Henry G., assignor to the Hartford Carpet Company	New York, N. Y	Carpet pattern (Design)	July 4, 1865.
2,111	Thompson, Henry G., assignor to the Hartford Carpet Company	New York, N. Y	Carpet pattern (Design)	July 4, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
2,112	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,113	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,114	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,115	Thompson, Henry G., assignor to the Hartford Carpet Company	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,116	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,117	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,118	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,119	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,120	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,121	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,122	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,123	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,124	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,125	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,126	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,127	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,128	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,129	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,130	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,131	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
2,132	Thompson, Henry G., assignor to the Hartford Carpet Company.	New York, N. Y.	Carpet pattern (Design)	July 4, 1865.
47,469	Thompson, Hopkins	New York, N. Y.	Chair, reclining	Apr. 25, 1865.
46,404	Thompson, I.	New York, N. Y.	Cigar machine	Feb. 14, 1865.
50,645	Thompson, James	Vevay, Ind	Churns	Oct. 24, 1865.
51,281	Thompson, James	England	Gun barrels, &c., from Bessemer steel, process of making	Nov. 28, 1865.
48,326	Thompson, James H.	Hoboken, N. J.	Grain huller	June 20, 1865.
46,734	Thompson, Jesse G.	Carbondale, Pa	Barrels, oil, and for other purposes, composition for coating	Mar. 7, 1865.
46,761	Thompson, J. M., and S. D. Tripp, assignors to Seth D. Tripp	Stoneham, Mass. / Lynn, Mass	Heel-polishing machine	Mar. 7, 1865.
49,320	Thompson, John S.	Glenn's Falls, N. Y.	Stave machines	Aug. 8, 1865.
	Thompson, Leander, and Andrew P. Jackson. (*See* Jackson & Thompson.)			
51,270	Thompson, M. L., assignor to self and E. L. Childs	Brooklyn, N. Y.	Clothes, bed, retainers, children's. (Antedated Nov. 20, 1865)	Nov. 28, 1865.
47,779	Thompson, Nathan	England	Jars, bottles, &c., stopper for. (Patented in England Jan. 4, 1865)	May 16, 1865.
50,856	Thompson, Nathaniel S.	Stoneham, Mass.	Shoe-edge burnishing machine	Nov. 7, 1865.
	Thompson, Nathaniel S., and A. S. McIntire. (*See* McIntire & Thompson.)			
50,515	Thompson, William A.	Brooklyn, N. Y.	Stoves, gas, burner for	Oct. 17, 1865.
46,735	Thomson, Sardis	Monterey, Mass.	Cheese, machine for cutting the curd of	Mar. 7, 1865.
	Thorn, Barclay, and Eli Keith. (*See* Keith & Thorn.)			
46,599	Thornton, William M. K.	Clinton Junction, Wis.	Jack, lifting	Feb. 28, 1865.
47,072	Thorpe, James E., assignor to self and Francis D. Kidder	Providence, R. I.	Engines, steam, valves for	Mar. 28, 1865.
46,832	Thorpe, T. B.	New York, N. Y.	Knife and fork, combined	Mar. 14, 1865.
47,999	Thorpe, T. B.	New York, N. Y.	Exercising machine	May 30, 1865.
47,140	Thurmon, John	Pike county, Mo.	Medical compound	Apr. 4, 1865.

47,880	Thurston, Edwin, and James R. Ledyard	Covington, Ky	Car trucks	May 23, 1865.
	Thurston, E. M., and J. W. Penney. (*See* Penney & Thurston.)			
51,631	Thurston, Samuel D	Somerville, Ohio	Broom head	Dec. 19, 1865.
	Tibbals, Shirk & Whitehead. (*See* Vedder, Nicholas S., assignor.) Design.			
51,243	Tibbals, William	South Coventry, Conn	Fire-arms, breech-loading	Nov. 28, 1865.
48,114	Tibbets, Jonathan S., and W. M. Merriel	Jeffersonville, Ind	Vehicles, wheel, axles for	June 6, 1865.
47,583	Tibbets, Milbern	Lancaster, Ind	Sugar pans, apparatus for shifting	May 2, 1865.
48,741	Tibbits, Jonathan H	Omaha City, Neb. Ter	Piano-forte actions	July 11, 1865.
46,405	Tice, Isaac P	New York, N. Y	Twine, paper, mode of manufacturing	Feb. 14, 1865.
	Tice, Isaac P. (*See* Smith, Austin S., assignor.) Reissue.			
	Tidemann, H. G., and Wiley J. Stratton. (*See* Stratton & Tidemann.)			
49,011	Tiffany, George S	Palmyra, Mich	Measures, board	July 25, 1865.
49,012	Tilden, Henry H	New Lebanon, N. Y	Sirup from corn, manufacture of	July 25, 1865.
49,013	Tilden, Henry H	New Lebanon, N. Y	Filtering sirups and other liquids, apparatus for	July 25, 1865.
47,056	Tilden, Howard	New York, N. Y	Sifter, flour	Mar. 28, 1865.
47,756	Tilden, Howard	New York, N. Y	Sifter, flour	May 16, 1865.
48,223	Tilden, Howard	Boston, Mass	Sifter, flour	June 13, 1865.
49,176	Tilden, Howard	Boston, Mass	Egg-beater	Aug. 1, 1865.
2,106	Tilden, Howard	Boston, Mass	Sifter, flour (Reissue)	Nov. 14, 1865.
	Tilden, Howard. (*See* Johnson, John, assignor.)			
	Tilden, Howard. (*See* Meservey, H. L., assignor.)			
49,200	Tileston, George W., assignor to Asa Wilmot	New Haven, Conn	Sifter, flour	Aug. 1, 1865.
49,664	Tilton, Fredcrick W	Bristol Station, Ill	Sirup, &c., apparatus for cooling	Aug. 29, 1865.
50,968	Tilton, George F	Salem, Mass	Clothes-dryer. (Antedated November 1, 1865)	Nov. 14, 1865.
	Tilton, J. C. (*See* Andrews, Joseph K., assignor.)			
47,584	Timby, Theodore R	Saratoga Springs, N. Y	Timepicces, globc	May 2, 1865.
47,585	Timby, Theodore R	Saratoga Springs, N. Y	Clocks, globe	May 2, 1865.
1,964	Tinker, Charles, and J. H. Sprague, assignors to Edwin Jones	Clevcland, Ohio	Harvesters (Reissue)	May 23, 1865
51,364	Tinker, John B	Buffalo, N. Y	Mowing machines	Dcc. 5, 1865.
50,288	Tittle, Daniel J	Albany, N. Y	Pill machines	Oct. 3, 1865.
49,321	Titus, Addison R	Warren, Pa	Stand, milk	Aug. 8, 1865.
	Tobacco Pipe Company. (*See* Bowen, Andrew J., assignor.) Reissue.			
46,955	Todd, A. W	Chicago, Ill	Sewing-machine bobbins, machine for winding	Mar. 21, 1865.
48,853	Todd, A. W	Chicago, Ill	Pumps, steam	July 18, 1865.
47,670	Todd, Joseph S	Macon City, Mo	Stove, coal, air-tight	May 9, 1865.
50,051	Todd, William W., and John Vandercar	Brooklyn, N. Y	Car brakes	Sept. 19, 1865.
	Toft, James. (*See* Seitz, Louis, assignor.)			
47,586	Toggenburger, Frederic	Chicago, Ill	Shells, explosive, by clockwork, timing	May 2, 1865.
46,406	Tolhurst, George W	Circleville, Ohio	Map	Feb. 14, 1865.
	Toll, Charles, *et al.* (*See* Custer, George, assignor.)			
46,407	Tomb, Asa M	Lyons, N. Y	Marble, machine for polishing	Feb. 14, 1865.
45,771	Tomkins, Joseph F	New York, N. Y	Barrel heads, method of securing. (Antedated Nov. 24, 1861)	Jan. 3, 1865.
50,780	Tomlinson, Abraham, assignor to self and Charles C. Clements	Cincinnati, Ohio	Blacking	Oct. 31, 1865.
48,603	Tomlinson, James	Newburg, Wis	Separator, grain	July 4, 1865.
46,508	Tompkins, C. R	Rochester, N. Y	Barrel heads, machine for cutting	Feb. 21, 1865.
	Tompkins, Clarke. (*See* Bradford, George S., assignor.)			
	Tompkins, John W., Stephen S., and James. (See Price, James, assignor.)			
45,880	Tompkins, Samuel E	Newark, N. J	Saddletrees, harness	Jan. 10, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,671	Toof, E. J.	Fort Madison, Iowa	Elevators, hay	May 9, 1865.
51,632	Toof, Edwin J	Fort Madison, Iowa	Draught equalizer, three-horse	Dec. 19, 1865.
48,742	Tooker, A. W	Harvard, Ill	Hay elevator and stacker	July 11, 1865.
	Toomey, M., *et al.* (*See* Deltour, William, assignor.)			
	Topham, James S., and Robert McMurray. (*See* McMurray & Topham.)			
48,743	Topliff, Cyrus L	New York, N. Y	Wick trimmers	July 11, 1865.
	Topliff, George R. (*See* Wing, Samuel, assignor.)			
51,122	Torrence, James, assignor to self and John George, jr	Irwin Station, Pa	Engines, steam, rotary	Nov. 21, 1865.
	Torrey, Elijah B., and John Clary. (*See* Clary and Torrey.)			
50,857	Torrey, R. S	Bangor, Me	Drill-rod attachments	Nov. 7, 1865.
	Torrey, Reuben S. (*See* McGinniss, Barney, assignor.)			
48,463	Toshach, William	New York, N. Y	Catch, spring, for window-sash	June 27, 1865.
50,052	Tostevin, James P	Racine, Wis	Cultivator	Sept. 19, 1865.
46,833	Totman, Edsell	Columbus, Pa	Sawing machines	Mar. 14, 1865.
50,516	Totten, Henry	Leesville, Ohio	Hay forks, horse	Oct. 17, 1865.
50,187	Totten, Robert C	Pittsburg, Pa	Casting grooved rolls in metal moulds	Sept. 26, 1865.
46,157	Totten, Lineus E	Brooklyn, N. Y	Fluting trimmings, apparatus for	Jan. 31, 1865.
49,805	Totten, William H	Academia, Pa	Elevators, hod	Sept. 5, 1865.
46,408	Towers, William H	New York, N. Y	Shoestring	Feb. 14, 1865.
49,570	Towers, William H	New York, N. Y	Hats	Aug. 22, 1865.
50,289	Towers, William H	New York, N. Y	Shirt and braces, combined	Oct. 3, 1865.
51,762	Towers, William H	New York, N. Y	Tanning, process for	Dec. 26, 1865.
	Towne, F. W., and James B. Sargent. (*See* Sargent & Towne.)			
	Towne, Horace H., and Joseph R. Taylor. (*See* Taylor & Towne.)			
51,496	Towne, Lauriston	Providence, R. I	Engines, steam	Dec. 12, 1865.
48,000	Towne, William I	Newton, Mass	Grates	May 30, 1865.
	Townsend, A. G., *et al.* (*See* Wheeler, S. H., assignor.)			
	Townsend, A. G. and E. P., *et al.* (*See* Wheeler, S. H., assignor.)			
	Townsend, Elmer. (*See* Turner, Sidney H., assignor.) Reissue.			
2,078	Townsend, Isaac	Philadelphia, Pa	Lemon press (Design)	May 30, 1865.
	Townsend, Isaac. (*See* Macneir, Leonidas, assignor.) Design.			
	Townsend, Isaac. (*See* Macneir, Leonidas, assignor.) Design.			
	Townsend, J., and William Fields. (*See* Fields & Townsend.) Reissue.			
	Townsend, J., and William Fields. (*See* Fields & Townsend.) Reissue.			
51,365	Townsend, James	Head of Sassafras, Md	Cultivators	Dec. 5, 1865.
	Townsend, Tappen, and Charles Sears. (*See* Sears & Townsend.)			
	Toy, Joseph. (*See* Bickford, John S., assignor.)			
48,633	Tracy, Edward H.. assignor to the Eagle Auger and Skate Manufacturing Company.	Meriden, Conn	Augers, dies for making	July 4, 1865.
	Tracy, H. N., and C. W. Warner. (*See* Warner & Tracy.)			
51,244	Tracy, James	Brewer, Me	Saw-mills	Nov. 28, 1865.
49,509	Trageser, John	New York, N. Y	Heating apparatus, steam, coils for	Feb. 21. 1865.

1,946	Trapp, William, jr	Elmira, N. Y	Barrel machinery (Reissue)	May 2, 1865.
1,947	Trapp, William, jr	Elmira, N. Y	Barrel machinery (Division 2 of reissue)	May 2, 1865.
	Traugh, Samuel A., and Martin H. Crane. (*See* Crane & Traugh.)			
	Design.			
48,327	Traut, Justus A., assignor to the Stanley Rule and Level Co	New Britain, Conn	Rules, folding, joint of	June 20, 1865.
50,433	Trauth, A	Saxony	Fire-arms, rifling	Oct. 10, 1865.
47,686	Travis, John E., assignor to self and Elon Francisco	Greenville, Ill	Plough, gang	May 9, 1865.
	Treadway, A. R. (*See* Warren, S. R., assignor.)			
47,057	Treadway, A. R., assignor	New Haven, Conn	Steam-pipes, valves for	Mar. 28, 1865.
46,956	Treadway, John	Haverstraw, N. Y	Bricks, moulding and pressing	Mar. 21, 1865.
47,881	Treadwell, W. B	Albany, N. Y	Stove, base-burning	May 23, 1865.
48,115	Treadwell, W. B	Albany, N. Y	Stove, coal	June 6, 1865.
2,197	Treat, J. L., assignor to Treat, Lindsley & Co	New Haven, Conn	Organ case, reed (Design)	Oct. 10, 1865.
50,404	Trego, A. Homer	Trenton, N. J	Blotter, paper weight, rule cutter, and square, combination of	Oct. 10, 1865.
50,053	Tremain, C. W	Memphis, Tenn	Engines, steam, valves of	Sept. 19, 1865.
46,059	Tremeschine, Giuseppe A	Austria	Lamps	Jan. 24, 1865.
49,571	Trenor, Henry H	New York, N. Y	Curtain fixture	Aug. 22, 1865.
50,517	Trenor, Henry H	New York, N. Y	Car brakes	Oct. 17, 1865.
50,518	Trenor, Henry H	New York, N. Y	Cars, railroad, running gear for	Oct. 17, 1865.
47,058	Trevor, Joseph	Lockport, N. Y	Desk and work table, combined	Mar. 28, 1865.
46,957	Tribble, Joanna B	Middleborough, Mass	Composition for preventing disease in vegetables	Mar. 21, 1865.
51,524	Trimble, Charles B., assignor to self and Charles T. Allen	New York, N. Y	Lock for coats, &c. (Antedated November 30, 1865)	Dec. 12, 1865.
51,633	Trimble, George	Philadelphia, Pa	Mitring machine. (Antedated December 5, 1865)	Dec. 19, 1865.
	Trimble, Robert, *et al.* (*See* Adams, Trimble & Adams.)			
45,772	Trimmer, B. T	Rochester, N. Y	Separators, grain	Jan. 3, 1865.
47,346	Trimmer, B. T	Rochester, N. Y	Separators, grain	Apr. 18, 1865.
46,834	Tripp, F. L	Prescott, Wis	Wagon brake	Mar. 14, 1865.
49,456	Tripp, S. D	Lynn, Mass	Shank-cutting machine	Aug. 15, 1865.
	Tripp, Seth D., and J. M. Thompson. (*See* Thompson & Tripp.)			
46,958	Tripp, Thomas	Chicago, Ill	Car coupling	Mar. 21, 1865.
2,061	Tripp, Thomas, assignor to R. E. Campbell	New York, N. Y	Propeller, wheel (Reissue)	Aug. 29, 1865.
49,806	Tripp, T. L	Prescott, Wis	Rein holder	Sept. 5, 1865.
	Trippel, Alexander, *et al.* (*See* Deby, Trippel & Gaussoin.)			
48,328	Trowbridge, T	Danbury, Conn	Hat bodies, composition for stiffening	June 20, 1865.
46,281	True, Joseph L	Garland, Maine	Planting potatoes, machine for	Feb. 7, 1865.
51,366	Truesdale, Charles, and Abner J. Sennett	Cincinnati, Ohio	Match plates, moulders', manufacture of	Dec. 5, 1865.
47,347	Thirgi, Mathew	Dubuque, Iowa	Beer, wine, &c., reservoir for	Apr. 18, 1865.
46,736	Tubesing, Henry	Pittsburg, Pa	Graining, printing, &c., flexible forms for	Mar. 7, 1865.
47,262	Tubesing, Henry	Pittsburg, Pa	Type, flexible, and apparatus for printing	Apr. 11, 1865.
49,177	Tuck, J. H. L	Cambridge, Ohio	Wells, drills for	Aug. 1, 1865.
47,757	Tucker, Charles B	Cambridgeport, Mass	Bed bottom	May 16, 1865.
49,956	Tucker, John E., assignor to self and C. H. Moore	Boston, Mass	Smoothing stone or implement	Sept. 12, 1865.
49,014	Tudor, Joseph F	Philadelphia, Pa	Saws, mode of sharpening	July 25, 1865.
49,665	Tufts, Augustus	Malden, Mass	Lanterns	Aug. 29, 1865.
	Tufts, James W. (*See* Murray, Robert, assignor.)			
	Tufts, James W. (*See* Hoyt and Murray, assignors.)			
49,935	Tufts, Nathaniel, jr	Boston, Mass	Gasometers, dry, packing the shafts of	Sept. 12, 1865.
46,762	Tufts, Timothy, assignor to J. H. W. Page	Somerville, Mass	Cannon, repeating	Mar. 7, 1865.
47,587	Tunison, H	White Hall Grove, Ill	Rakes, horse	May 2, 1865.
47,687	Tunstill, William, assignor to Theodore H. Conkling	New York, N. Y	Looms	May 9, 1865.
48,242	Turnbull, Andrew, assignor to P. and F. Corbin	New Britain, Conn	Bell, door	June 13, 1865.
46,835	Turner, Don Carlos, assignor to self and Charles Silliman	Madison, Wis	Cane, sugar, machine for crushing	Mar. 14, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,501	Turner, Edward, assignor to Simon R. Golibart	Baltimore, Md	Docks, floating	Apr. 25, 1865.
47,882	Turner, Greenleaf L	New York, N. Y	Springs, machinery for coiling	May 16, 1865.
	Turner, Job A., *et al.* (*See* Blake, George F., assignor)			
50,054	Turner, L. W	Meriden, Conn	Sifter, flour	Sept. 19, 1865.
46,409	Turner, M. M	North Fairfield, Ohio	Dresses, ladies', method of finding waist and chest measurements of.	Feb. 14, 1865.
49,838	Turner, Samuel D., assignor to the Union Horseshoe Company	Providence, R. I	Horseshoes, machine for punching	Sept. 5, 1865.
1,962	Turner, Sidney A., assignor to Elmer Townsend	Boston, Mass	Sewing machines (Reissue)	May 16, 1865.
46,036	Turrell, Levi W	Newburg, N. Y	Pumps, steam	Jan. 24, 1865.
47,174	Turrell, L. W., Samuel Stanton, and L. C. Ward	Newburg, N. Y	Oil ejectors	Apr. 4, 1865.
47,758	Tuttle, Edward A	Brooklyn, N. Y	Latches	May 16, 1865.
49,666	Tyler, Albert, and George F. Kendall	Fitchburg, Mass	Steam cock	Aug. 29, 1865.
	Tyler, David R. (*See* Reed, John B., assignor.)			
50,859	Tyler, Erastus	Hancock, Ill	Apples, instrument for gathering	Nov. 7, 1865.
49,481	Tyler, Henry B., assignor to self and Eugene M. Prevost	Norwich, Conn	Locks	Aug. 15, 1865.
50,860	Tyler, Philos B William M. Chandler, and L. F. Standish	Springfield, Mass Springfield, Mass Chicopee Falls, Mass	Matches, friction, manufacture of	Nov. 7, 1865.
51,367	Tyler, Salmon E., and Richard Tattershall	Beloit, Wis	Buckle, harness	Dec. 5, 1865.
47,502	Tyrrell, Alexander, assignor to self and Kimball Ferrin	Batavia, N. Y	Horseshoe	Apr. 18, 1865.
	Tyson, Jesse and James W. (*See* Margulies, B., assignor.)			
	Uhlinger, William P	Philadelphia, Pa	Desk, school (Extension of design)	Mar. 20, 1865.
50,055	Uhrland, Francis	Buffalo, N. Y	Beer cooler	Sept. 19, 1865.
48,224	Umholtz, Philip	Tremont, Pa	Coal breaker	June 13, 1865.
48,604	Umholtz, Philip	Tremont, Pa	Pumps, rotary	July 4, 1865.
46,037	Underhill, J. S	New York, N. Y	Vessels of war	Jan. 24, 1865.
	Union Horseshoe Company. (*See* Turner, Samuel D., assignor.)			
	United States Barrel-Coating Company. (*See* Hook & Darlington, assignors.) Reissue.			
	Universal Safety-Match Company. (*See* Jewett, Helen M., ass'r.)			
	Upham, J. P., *et al.* (*See* Fuller, Jim B., assignor.)			
	Upham, James P., and Jim B. Fuller. (*See* Fuller & Upham, assignors.)			
	Upham, James P., and Jim B. Fuller. (*See* Fuller & Upham, assignors.)			
50,861	Upham, Lucian	Pawtucket, N. Y	Hinges	Nov. 7, 1865.
47,348	Upton, Albert W	Lowell, Mass	Suspenders	Apr. 18, 1865.
	Ureka Manufacturing Company. (*See* Mills, C. A., assignor.)			
46,158	Uren, Thomas	New York, N. Y	Arms and hands, artificial	Jan. 31, 1865.
46,159	Uren, Thomas	New York, N. Y	Arms and hands, artificial	Jan. 31, 1865.
48,002	Uren, Thomas	New York, N. Y	Arms, artificial	May 30, 1865.
48,854	Ustick, Stephen	Philadelphia, Pa	Table for invalids	July 18, 1865.
49,807	Ustick, Stephen	Philadelphia, Pa	Table and apparatus for invalids	Sept. 5, 1865.
	Ustick, Stephen, and Samuel Macferran. (*See* Macferran & Ustick.)			

	Ustick, Stephen, and Isaac P. Wendell. (*See* Wendell & Ustick.)			
	Utley, J. S. (*See* Woodward, Joseph, assignor.)			
	Utossy, J. (*See* Boyse, J. O., assignor.)			
46,311	Valentine, E., and M. T. Ridout, assignors to selves and William Beck.	Milwaukee, Wis	Metallic tubes, machine for making	Feb. 7, 1865.
49,044	Valentine, E., and M. T. Ridout, assignors to selves and William Beck.	Milwaukee, Wis	Threshing machine, apparatus for feeding	July 25, 1865.
49,045	Valentine, E., and M. T. Ridout, assignors to selves and William Beck.	Milwaukee, Wis	Metallic tubes and spouts, machine for making	July 25, 1865.
50,862	Valentine, James	Woodbridge, N. J	Brick, scouring	Nov. 7, 1865.
49,178	Valentine, Samuel W	Boston, Mass	Shears, cutting and grasping	Aug. 1, 1865.
2,107	Valentine, W. P	Fond du Lac, Wis	Shingle machines (Reissue)	Nov. 14, 1865.
46,763	Valentine, John G., assignor to self and R. H. Isbell	Naugatuck, Conn	Buttons, machines for planing	Mar. 7, 1865.
50,993	Valetton, L. D., assignor to self and H. W. Hensel	Philadelphia, Pa	Looms, Jacquard apparatus for	Nov. 14, 1865.
47,156	Valls, Signor, assignor to self and Joseph Chapman	Philadelphia, Pa	Cars, railway	Apr. 4, 1865.
50,519	Van, John	Cincinnati, Ohio	Stoves, cook	Oct. 17, 1865.
50,520	Van Anden, William	Poughkeepsie, N. Y	Lubricating journals, mode of	Oct. 17, 1865.
	Vanee, Isaac, and Oliver Lindsay. (*See* Lindsay & Vanee.)			
49,015	Vance, Vivian	Havana, N. Y	Medicine for horses	July 25, 1865.
47,141	Van Choate, S. F	New York, N. Y	Telegraphs, insulators for	Apr. 4, 1865.
	Van Choate, S. F., and Stuart Gwynne. (*See* Ward, Henry H., assignor.)			
51,495	Vendegrift, Andrew J	Cincinnati, Ohio	Separators, grain	Dec. 12, 1865.
2,148	Vanderbeck, H., and E. W. Hadden	New York, N. Y	Picture frame (Design)	July 18, 1865.
	Vanderbergh, E. F. (*See* Savy, D. A. B., assignor.)			
48,744	Van Derburgh, George E	New York, N. Y	Building block, artificial	July 11, 1865.
48,745	Van Derburgh, George E	New York, N. Y	Building block, silicated	July 11, 1865.
48,746	Van Derburgh, George E	New York, N. Y	Stone, artificial	July 11, 1865.
48,747	Van Derburgh, George E	New York, N. Y	Stone, natural and artificial, solution for saturating	July 11, 1865.
	Van Derbergh, G. E., *et al.* (*See* Mason, Melchor B., assignor.)			
	Van Derbergh, G. E., *et al.* (*See* Mason, Melchor B., assignor.)			
	Vanderear, John, and Wm. W. Todd. (*See* Todd & Vandercar.)			
45,881	Vander Heyden, George	Troy, N. Y	Grate, stove	Jan, 10, 1865.
47,470	Vanderveer, Benjamin M	Clyde, N. Y	Locks	Apr. 25, 1865.
51,763	Vanderveer, Benjamin M	Clyde, N. Y	Locks	Dec. 26, 1865.
49,457	Vandusen, Abram	Chicago, Ill	Brush	Aug. 15, 1865.
49,060	Vandyke, John	Grimsby, Canada West	Boring machines	July 25, 1865.
49,808	Van Gieson, Wm. H	Waterbury, Conn	Nails, furniture, dies for	Sept. 5, 1865.
47,471	Van Hennick, S., and T. Allen	New York, N. Y	Pulley block	Apr. 25, 1865.
2,044	Van Horn, W. J., and Wm. Alexander	Louisiana, Mo	Tobacco, plug, machine for sheeting (Reissue)	Aug. 1, 1865.
48,137	Van Kannel, Theophilus, assignor to self and Joseph Beaire	Cincinnati, Ohio	Cherry-stoning machines	June 6, 1865.
48,748	Van Kerson, Isaac	Kalamazoo, Mich	Stump and grub extractors	July 11, 1865.
47,472	Van Nest, John M	Clayton, Iowa	Racks, feed	Apr. 25, 1865.
48,033	Vannevar, Edmund B., assignor to E. B. Vannevar & Co	Boston, Mass	Ships' deck and side lights, means of closing	May 30, 1865.
	Van Norman, A. (*See* Prentiss, C. H., assignor.)			
49,179	Van Norman, D. D., L. B. Brown, and E. A. Morrison	Petroleum Centre, Pa	Burning hydrocarbon oils	Aug. 8, 1865.
51,102	Van Patten, F	Ilion, N. Y	Chain-links, machine for trimming	Nov. 21, 1865.
50,752	Vanstone, Samuel	Providence, R. I	Fumigator	Oct. 30, 1865.
	Van Vechten, I. R., *et al.* (*See* Powers, Timothy I., assignor.)			
	Van Vechten, I. R., and J. P. Fitch. (*See* Powers, Timothy I., assignor.)			
50,521	Van Velthoven, Richard, and Joseph H. Hazzard	Philadelphia, Pa	Photographic albums	Oct. 17, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
48,016	Van Wagenen, Albert	Boston, Mass.	Window blinds	June 6, 1865.
46,836	Van Wagoner, Thomas	Newark, N. J	Skates	Mar. 14, 1865.
	Van Wisker, Martin, and Henry Baragwanth. (*See* Baragwanth & Van Wisker.)			
2,179	Van Wormer, Jasper	Albany, N. Y	Stoves, hall (Design)	Sept. 12, 1865.
1,924	Varney, Thomas	San Francisco. Cal	Amalgamator (Reissue)	Mar. 28, 1865.
45,882	Vars, Nathan	New Market, N. J	Ploughs, side-hill	Jan. 10, 1865.
46,160	Vassar, Robert G	Poughkeepsie, N. Y	Paste, blueing	Jan. 31, 1865.
49,689	Vaughan, John Ives	England	Petroleum, &c., apparatus for the continuous distillation of. (Patented in England October 11, 1864.)	Aug. 29, 1865.
51,497	Vaughan, S. O. and P. W. T	De Kalb, Ill	Pruning knife	Dec. 12, 1865.
	Vedder, M., and H. S. Myers. (*See* Blythe, John E., assignor.)			
2,154	Vedder, Nicholas S., assignor to Cox, Church & Co	Troy, N. Y	Stove base (Design)	Aug. 1, 1865.
2,155	Vedder, Nicholas S., assignor to Cox, Church & Co	Troy, N. Y	Stove base (Design)	Aug. 1, 1865.
2,156	Vedder, Nicholas S., assignor to Cox, Church & Co	Troy, N. Y	Stove, cook (Design)	Aug. 1, 1865.
2,157	Vedder, Nicholas S., assignor to Cox, Church & Co	Troy, N. Y	Stove, top of a (Design)	Aug. 1, 1865.
2,198	Vedder, Nicholas S., assignor to Tibbals, Shirk & Whitehead	Troy, N. Y	Stove, cook (Design)	Oct. 10, 1865.
46,312	Vereggc, H. W., assignor to B. C. White, M. G. Henry, and William Cain, jr.	Richmond, Ind	Mills, fanning	Feb. 7, 1865.
45,943	Vergenes, Maurice	New York, N. Y	Piano-fortes. (Antedated January 2, 1865)	Jan. 17, 1865.
47,775	Vickers, John H., assignor to self and Lucius W. Pond	Worcester, Mass	Fire-arms, revolving	May 16, 1865.
46,978	Vickers, Thomas Edward	Sheffield, Great Britain	Ordnance, manufacture of	Mar. 21, 1865.
49,180	Vine, William	Norwalk, Conn	Lathes, dogs for	Aug. 1, 1865.
50,520	Vining, A. P	Scranton, Penn	Ventilator for railroad cars. (Antedated October 11, 1865)	Oct. 7, 1865.
49,322	Vining, George	Boston, Mass	Ores, desulphurizing and disintegrating	Aug 8, 1865.
45,802	Vitteeog, Edouard H	Beaumontel, France	Mills, bolting	Jan. 3, 1865.
46,510	Voak, John	Penn Yan, N. Y	Curry, brush or card	Feb. 21, 1865.
48,225	Vogeli, Felix	Newburg, N. Y	Horse-fastener	June 13, 1865.
51,498	Vollschurtz, R	New York, N. Y	Locks	Dec. 12, 1865.
46,431	Von Bohn, John	Australia	Molasses, process for improving the color of	Feb. 14, 1865.
50,670	Vonder, Poppenburg, Johann	Birmingham, England	Fire-arms, breech-loading. (Patented in England Feb. 14, 1865.)	Oct. 24, 1865.
51,103	Von Egloffstein, Frederick	New York, N. Y	Spectrum for producing line engraving, heliographic and photographic.	Nov. 21, 1865.
47,672	Voris, Isaac N	Peseadora, Cal	Shingle machines	May 9, 1865.
51,368	Vose, Richard	New York, N. Y	Car springs. (Antedated November 20, 1865)	Dec. 5, 1865.
	Voss, H. B. (*See* Dahis, Florian, assignor.)			
50,426	Vossnack, Emil, assignor to self and G. A. Goldsmith & Co	New York, N. Y	Collars, paper, machine for folding	Oct. 10, 1865.
2,213	Vredenburgh, S. G	Mount Vernon, N. Y	Badge of the Union League (Design)	Oct. 31, 1865.
	Wackerhagen, E., *et al.* (*See* Wendrem, James C., assignor.)			
48,780	Wadham, Edward, assignor to Edward R. Kent	Hamilton, Canada West	Motion, transmitting	July 11, 1865.
50,290	Wadsworth, Christopher	East Livermore, Me	Card cutters	Oct. 3, 1865.
48,605	Wadsworth, Salmon J	Buffalo, N. Y	Wells, artesian, drilling	July 4, 1865.
	Wager & Falls. (*See* Johnson, Benjamin F., assignor.) Design.			
	Waggoner, M. O., and George P. Roberts. (*See* Dillingham, Hiram P., assignor.)			

48,117	Wagner, A. H.	Chicago, Ill.	Drills, seed	June 6, 1865.
47,588	Wagner, Conrad P.	New York, N. Y.	Locks	May 2, 1865.
51,764	Wait, John H.	Portsmouth, Ohio.	Engine, steam, governors	Dec. 26, 1865.
46,837	Wait, Enoch.	South Natick, Mass.	Fabrics, felted, manufacture of	Mar. 14, 1865.
49,358	Wait, Enoch, assignor to the Elliot Felting Mills.	Franklin City, Mass.	Fabric, felted	Aug. 8, 1865.
51,781	Waite, W. W., assignor to Flax Leather Manufacturing Co.	South Natick, Mass.	Leather, artificial, manufacture of	Dec. 26, 1865.
46,282	Wakely, Charles S.	Madison, Wis.	Bill-holder	Feb. 7, 1865.
47,883	Wakeman, Roswell, and Joseph L. Balance.	Port Deposit, Md.	Hay, &c., cutting and pressing	May 23, 1865.
47,473	Wakeman, Zalmon B.	Rockford, Ill.	Vehicles	Apr. 25, 1865.
49,936	Walber, James.	New York, N. Y.	Legs, artificial	Sept. 12, 1865.
	Walcott, Henry L., and Nathaniel W. Westcott. (*See* Westcott & Walcott.)			
50,307	Walcott, Henry S., assignor to James D. Sumner.	Boston, Mass.	Water meters	Oct. 3, 1865.
	Waldron, B. F., and C. I. Seavey. (*See* Curtis, Andrew J., ass'rs.)			
48,749	Wales, Sigourney.	Boston, Mass.	Windows	July 11, 1865.
50,405	Wales, Sigourney.	Boston, Mass.	Window sash, cord for	Oct. 10, 1865.
46,511	Wales, William.	Fort Lee, N. Y.	Microscopes	Feb. 21, 1865.
	Walker, A. B., *et al.* (*See* Adams, John, assignor.)			
45,773	Walker, Alfred.	New Haven, Conn.	Caster for furniture	Jan. 3, 1865.
46,737	Walker, D. F.	Bowling Green, Ky.	Eccentric, adjustable	Mar. 7, 1865.
49,937	Walker, Daniel T.	Brooklyn, E. D., N. Y.	Metal, machinery for punching	Sept. 12, 1865.
49,016	Walker, E. A.	Nashville, Tenn.	Cocks, gauge	July 25, 1865.
49,017	Walker, Edson D.	Milbury, Mass.	Building purposes, staging for	July 25, 1865.
	Walker, F. S., and H. A. and N. H. King. (*See* King & Walker.)			
45,883	Walker, George G.	Boston, Mass.	Grate, stove	Jan. 10, 1865.
46,161	Walker, George W.	Lowell, Mass.	Suspenders, chest-expanding	Jan. 31, 1865.
47,474	Walker, George W.	Boston, Mass.	Stove	Apr. 25, 1865.
49,181	Walker, J. H.	Worcester, Mass.	Boots and shoes, cutting soles of	Aug. 1, 1865.
49,572	Walker, J. H.	Worcester, Mass.	Boots and shoes, mode for cutting soles for	Aug. 22, 1865.
49,458	Walker, James T.	Palmyra, N. Y.	Lamp chimneys, bottles, &c., device for cleaning	Aug. 15, 1865.
49,938	Walker, Londus B.	Chicago, Ill.	Cultivators	Sept. 12, 1865.
46,959	Walker, Luther C.	Baltimore, Md.	Tobacco pipes	Mar. 21, 1865.
51,765	Walker, Richard.	Batavia, N. Y.	Wagon wheels, machines for setting spokes in	Dec. 26, 1865.
45,884	Walker, Sylvenus.	Boston, Mass.	Penholders. (Antedated September 11, 1863)	Jan. 10, 1865.
47,340	Walker, Sylvenus.	New York, N. Y.	Piano-forte, lock for	Apr. 18, 1865.
48,118	Walker, Sylvenus.	New York, N. Y.	Vegetable slicer	June 6, 1865.
	Walker, S. J., *et al.* (*See* Silvers, Aaron, assignor.)			
	Walker, S. W., & Co. (*See* Bolles, George N., assignor.)			
	Walker, S. W., & Co. (*See* Bolles, George N., assignor.)			
49,573	Wall, Charles R. M.	Brooklyn, N. Y.	Brewers, cooler for	Aug. 22, 1865.
50,523	Wall, Charles R. M.	Brooklyn, N. Y.	Liquors, malt, method of decolorizing	Oct. 17, 1865.
51,499	Wall, Henry M.	Niles, Mich.	Billiard tables, chalk holder for	Dec. 12, 1865.
	Wallace & Sons. (*See* Kellogg, Henry, assignor.)			
51,245	Wallace, James.	Berks county, Pa.	Ploughs. (Antedated May 28, 1865)	Nov. 28, 1865.
	Wallace, James, and Robert S. Nickerson. (*See* Nickerson & Wallace.)			
48,329	Wallace, James B.	Franklin, Ohio.	Separator, grain and grass-seed	June 20, 1865.
51,500	Wallace, Lorenzo.	Leavenworth City, Kansas.	Hay, machines for raking and bunching	Dec. 12, 1865.
50,524	Wallace, Robert, and De Grasse and Herbert E. Fowler.	Wallingford, Conn.	Corset clasps	Oct. 17, 1865.
45,885	Wallace, Samuel Jacob.	Carthage, Ill.	Grain binders	Jan. 10, 1865.
51,666	Wallis, Samuel, assignor to self and John Pepper.	Lowell, Mass.	Knitting machines	Dec. 19, 1865.
46,960	Wallis, Theodore, and Thomas Witbeck.	Scipio, N. Y.	Shears or nippers, hand	Mar. 21, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
48,464	Walrad, L. D	Sycamore, Ill	Railroad tracks, device for preventing snow-drifts on	June 27, 1865.
	Walsh, Robert, and Lewis Z. Dodds. (*See* Dodds & Walsh.)			
48,465	Walsh, Zachariah	Newark, N. J	Nail, trunk, machine for putting head fillings on	June 27, 1865.
46,961	Walter, Philip	New York, N. Y	Head dresses, waterfall, for ladies	Mar. 21, 1865.
48,119	Walton, Chauncey	Washington, D. C	Cigars	June 6, 1865.
46,162	Walton, Jonathan	Brooklyn, N. Y	Funnel spouts, corrugated, making	Jan. 31, 1865.
	Walton, L. H., *et al.* (*See* Martin, Benjamin G., assignor.)			
	Walton, L. H., *et al.* (*See* Martin, Benjamin G., assignor.)			
	Walton, L. H., *et al.* (*See* Martin, Benjamin G., assignor.)			
	Walton, L. H., *et al.* (*See* Martin, Benjamin G., assignor.)			
45,774	Walton, Thomas H	Ashland, Pa	Fuze, blasting	Jan. 3, 1865.
	Want, Edwin, and James E. Spencer. (*See* Spencer & Want.)			
	Ward, Charles Y. (*See* Ware, James, assignor.)			
	Ward, Daniel, and John Freeland. (*See* Freeland & Ward.)			
50,863	Ward, David, and Russell S. Luce	Lawsville Centre, Pa	Alarm, fire and burglars'	Nov. 7, 1865.
51,246	Ward, D. T	Cardington, Ohio	Churns	Nov. 28, 1865.
46,979	Ward, Frederick Oldfield	England	Process of liberating potash or soda from alkaline silicates	Mar. 21, 1865.
49,482	Ward, Henry H., ass'or to S. F. Van Choate and Stuart Gwynne	New York, N. Y	Telegraph wires, insulators for	Aug. 15, 1865.
46,055	Ward, James, assignor to self and Garrett A. Laus	Boston, Mass	Brick machine	Jan. 24, 1865.
	Ward, J. K., and C. Kupferle. (*See* Kupferle & Ward.)			
51,501	Ward, James W., and Stephen D. Wilson	Richmond, Ind	Shades, window	Dec. 12, 1865.
	Ward, John, jr. (*See* Johnson, Josee, assignor.)			
	Ward, L. C., *et al.* (*See* Turrell, Stanton & Ward.)			
48,750	Ward, Samuel	Lanc, Ill	Harvesters, corn	July 11, 1865.
	Ward, Wm. James, and Adolph Behr. (*See* Behr & Ward.)			
	Warder & Child. (*See* Cochrane, William F., assignor.)			
	Warder & Child. (*See* Cochrane, William F., assignor.)			
	Warder & Child. (*See* Cochrane, William F., assignor.)			
	Warder & Child. (*See* Cochrane, William F., assignor.)			
	Warder & Child. (*See* Cochrane, William F., assignor.)			
	Warder & Child. (*See* Cochrane, William F., assignor.)			
	Warder, B. F., *et al.* (*See* Cochrane, William F., assignor.)			
	Warder, B. H., *et al.* (*See* Cochrane, William F., assignor.)			
50,188	Wardwell, C. P. S	Lake Village, N. H	Needles, knitting, machine for making	Sept. 26, 1865.
2,087	Wardwell, George J., ass'or to the Steam Stonecutter Company	Rutland, Vt	Stonecutting machine (Reissue)	Oct. 10, 1865.
2,088	Wardwell, George J., ass'or to the Steam Stonecutter Company	Rutland, Vt	Stonecutting machine (Division 2 of reissue)	Oct. 10, 1865.
51,271	Wardwell, George J., ass'or to the Steam Stonecutter Company	Rutland, Vt	Stonecutting machinery	Nov. 28, 1865.
51,272	Wardwell, George J., ass'or to the Steam Stonecutter Company	Rutland, Vt	Stone, machinery for cutting	Nov. 28, 1865.
51,273	Wardwell, George J., ass'or to the Steam Stonecutter Company	Rutland, Vt	Stone channelling machinery, cutter for	Nov. 28, 1865.
47,234	Wardwell, Timothy F	Penn Yan, N. Y	Plants, boxes for transportation	Apr. 11, 1865.
49,939	Ware, Hiram B	Burlington, Iowa	Halters, mode of manufacturing	Sept. 12, 1865.
50,308	Ware, James, assignor to self and Charles Y. Ward	North Hoboken, N. J	Drawers	Oct. 3, 1865.
	Warker, Thomas, and Carl Schultz. (*See* Schultz & Warker.)			
	Warker, Thomas, and Carl Schultz. (*See* Schultz & Warker.)			
49,940	Warne, Elijah	Broadway, N. J	Alarm, burglar, and lock	Sept. 12, 1865.

50,969	Warner, Alanson	Ontario, N. Y	Harvesters, gearing for	Nov. 14, 1865.
48,001	Warner, A. E. and J. V	Norwalk, Ohio	Sawing machines	May 30, 1865.
2,045	Warner, A. E. and J. V	Norwalk, Ohio	Sawing machines (Reissue)	Aug. 1, 1865.
50,525	Warner, C. W., and H. N. Tracy	Williston, Vt / Essex, Vt	Rakes, horse	Oct. 17, 1865.
48,606	Warner, Eli G	Union Township, Ohio	Rakes, grain	July 4, 1865.
48,120	Warner, H. W	Greenfield, Mass	Valve, throttle, gear	June 6, 1865.
48,121	Warner, H. W	Greenfield, Mass	Buckle, lever	June 6, 1865.
50,309	Warner, H. W., assignor to self, F. J. Pratt, and E. W. Russell	Greenfield, Mass	Railroad chair	Oct. 3, 1865.
50,970	Warner, Joel Sylvester	Ogdensburg, N. Y	Shuttles, tatting	Nov. 14, 1865.
	Warner, L. W. (*See* Buckett, Joseph, assignor.)			
47,073	Warner, S. R., assignor to self and A. R. Treadway	New Haven, Conn	Steam pipes, valves for	Mar. 28, 1865.
	Warner, S. R., and A. R. Treadway. (*See* Treadway & Warner.)			
	Warner, Wm. S., and George S. Parry. (*See* Parry & Warner.)			
	Warner, Wm. S., and Geo. S. Parry. (*See* Parry & Warner.)			
47,142	Warren, A. E., and Warren, G. W	Cleveland, Ohio / Hillsdale, Mich	Addressing machine	Apr. 4, 1865.
51,634	Warren, Charles H., and A. C. Baldwin	Tiffin, Ohio	Washboard	Dec. 19, 1865.
47,235	Warren, Cyrus M	Boston, Mass	Petroleum, &c., apparatus for distilling	Apr. 11, 1865.
49,574	Warren, David	Gettysburg, Pa	Railroads, switches for	Aug. 22, 1865.
	Warren, E. R., *et al.* (*See* Hurd, Daniel, assignor.)			
45,775	Warren, George W	Ossian, N. Y	Seeding machine, broadcast	Jan. 3, 1865.
46,410	Warren, J. T	Stafford, N. Y	Knapsack slings	Feb. 14, 1865.
49,594	Warren, J. T., assignor to self and Robert A. Cheesebrough	Stafford, N. Y	Engines, rotary	Aug. 22, 1865.
50,666	Warren, J. T., assignor to self and Robert A. Cheesebrough	Stafford, N. Y	Engines, rotary	Oct. 24, 1865.
2,094	Warren, J. T., assignor to Robert A. Cheesebrough	New York, N. Y	Cartridge boxes (Reissue)	Oct. 17, 1865.
50,406	Warren, John M	Boston, Mass	Glass, polish for. (Antedated September 28, 1865)	Oct. 10, 1865.
	Warren, Otis. (*See* Allen, William H., assignor.) Reissue.			
45,944	Warren, Owen G	New York, N. Y	Amalgamating vessels, apparatus for	Jan. 17, 1865.
51,635	Warren, Owen G	New York, N. Y	Railroad box rail. (Antedated December 14, 1865)	Dec. 19, 1865.
51,247	Warth, Albin	Stapleton, N. Y	Sewing machines, guides for	Nov. 28, 1865.
	Warwick Tool Company. (*See* Cushman, A. F., assignor.)			
	Washburn, A. G. (*See* Ball, Thomas C., assignor.)			
45,894	Washburn, F. O., assignor to self and John C. Scott	Millville, Mass	Calipers	Jan. 10, 1865.
46,838	Washburn, George I	Worcester, Mass	Lever, differential	Mar. 14, 1865.
48,607	Washburn, George I	Worcester, Mass	Thermal-motor	July 4, 1865.
48,608	Washburn, George I	Worcester, Mass	Wire straightening machines	July 4, 1865.
49,809	Washburn, George I	Worcester, Mass	Engines, steam	Sept. 5, 1865.
49,810	Washburn, George I	Worcester, Mass	Steam generators	Sept. 5, 1865.
49,941	Washburn, George I	Worcester, Mass	Feed-water apparatus	Sept. 12, 1865.
	Washburn, J., and P. L. Moen. (*See* Chesney & Brown, assignors.) Reissue.			
	Washburn, J., and P. L. Moen. (*See* Frost, W. E., assignor.)			
	Washburn, J., and P. L. Moen. (*See* Frost, W. E., assignor.)			
	Washburn, J., and P. L. Moen. (*See* Frost, W. E., assignor.)			
47,475	Wassell, Edwin	Pittsburg, Pa	Rolling mills	Apr. 25, 1865.
48,496	Wassell, Edwin, assignor to self and Archibald McFarland	Pittsburg, Pa	Rolling apparatus	June 27, 1865.
	Waterbury Buckle Company. (*See* Smith, Dwight L., assignor.)			
50,189	Waterhouse, H. K	Factory Point, Vt	Thill coupling	Sept. 26, 1865.
1,874	Waterman, Henry	Brooklyn, N. Y	Wires, tempering (Reissue)	Feb. 14, 1865.
50,056	Waters, Gardner	Cincinnati, Ohio	Beer coolers	Sept. 26, 1865.
45,886	Waters, Hervey	Northbridge, Mass	Metals, machine for rolling	Jan. 10, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,589	Waters, Hervey	Northbridge, Mass	Scythes, blanks for	May 2, 1865.
47,590	Waters, Hervey	Northbridge, Mass	Metal, machine for rolling	May 2, 1865.
48,466	Waters, Hervey	Northbridge, Mass	Rollers, guide for	June 27, 1865.
	Waters, H. H. (*See* Wright, George F., assignor.)			
46,434	Watkins, F	England	Bolts, machine for leading	Feb. 14, 1865.
	Watkins, George, and John Lacey (*See* Lacey & Watkins.)			
50,972	Watson, Albert, and George W. Miller	Springfield, Mass	Railroad switch	Nov. 14, 1865.
45,776	Watson, Egbert P	New York, N. Y	Spur carrier, boot drawer, and pantaloon guard, combined	Jan. 3, 1865.
	Watson, G. V., *et al.* (*See* Milsom, Spendelow & Watson.)			
47,476	Watson, James	Cliff Mine, Mich	Ores, apparatus for separating	Apr. 25, 1865.
47,884	Watson, James	Pittsburg, Pa	Ores, apparatus for washing	May 23, 1865.
50,190	Watson, James	Philadelphia, Pa	Tools, boring, coupling for shafts of	Sept. 26, 1865.
51,369	Watson, W. M	Tonica, Ill	Alcohol, method of treating grain for the manufacture of	Dec. 5, 1865.
50,407	Watt, James	Buffalo, N. Y	Hammers, steam, valve gear of	Oct. 10, 1865.
45,799	Watters, W. E., deceased, by Mary P. Watters, administratrix, assignor to Aquila H. Pickering.	East Bend, Ky	Pumps	Jan. 3, 1865.
50,971	Way, Isaac I	Memphis, Tenn	Press, cotton	Nov. 14, 1865.
50,864	Way, Thomas B	Bennington, Vt	Bottle stopper	Nov. 7, 1865.
1,855	Wayne, Joseph W., and Joseph R. Miller	Cincinnati, Ohio	Table, folding (Reissue)	Jan. 24, 1865.
46,163	Weaver, Jefferd L	Orange, Mass	Bonnet binding, making	Jan. 31, 1865.
45,887	Weaver, Theos	Harrisburg, Pa	Chair, adjustable	Jan. 10, 1865.
47,175	Weaver, Theos	Harrisburg, Pa	Writing tablet	Apr. 4, 1865.
49,323	Weaver, W. I., and J. M. Sandifer	Somerset, Ky	Clock escapements	Aug. 8, 1865.
49,354	Webb, Albion, assignor to self and D. M. Dunham	Bangor, Me	Cultivator, horse hoe	Aug. 8, 1865.
47,077	Webb, Francis William	England	Fagots, construction of. (Patented in England February 9, 1864)	Mar. 28, 1865.
	Webb, Henry J., and Stephen D. Cook. (*See* Cook & Webb.)			
2,131	Webb, Rodolphus L	New Britain, Conn	Latches, knob (Reissue)	Dec. 19, 1865.
	Webber, Charles T., and W. M. Davie. (*See* Davie & Webber.)			
51,370	Webber, Henry A., and Charles Reipenyder	Chicago, Ill	Barrels, apparatus for filling	Dec. 5, 1865.
51,371	Webber, Henry A., and Charles Reipenyder	Chicago, Ill	Barrels, apparatus for filling	Dec. 5, 1865.
51,372	Webber, Henry A., and Charles Reipenyder	Chicago, Ill	Barrel fillers, self-closing	Dec. 5, 1865.
49,684	Webber, Nathaniel B., assignor to self and Thomas B. Jackson	Paoli, Ind	Washing machine and wringer	Aug. 29, 1865.
	Weber, A., and H. Maurer. (*See* Oest, Theodore L., assignor.)			
46,283	Weber, Frederick A., and William H. Greene	Woonsocket, R. I	Soda-water apparatus	Feb. 7, 1865.
46,284	Weber, Frederick A., and William H. Greene	Woonsocket, R. I	Soda-water apparatus, draught-tube for	Feb. 7, 1865.
46,195	Weber, Jacob, assignor to self, William Wharton, jr., and Ira B. Snyder.	New York, N. Y	Knapsack	Jan. 31, 1865.
46,164	Webster, Henry	Beetown, Wis	Plough, gang	Jan. 31, 1865.
49,667	Webster, Horace H	Claremont, N. H	Cultivators	Aug. 29, 1865.
46,198	Webster, James	England	Zinc, manufacture of. (Patented in England May 18, 1864)	Jan. 31, 1865.
51,104	Webster, Joel, and James G. Morgan	Brooklyn, N. Y	Ore crusher	Nov. 21, 1865.
2,065	Webster, John Taylor, assignor to Edward Harvey	New York, N. Y	Floor oil-cloth (Design)	May 9, 1865.
49,046	Webster, Thomas B., assignor to self and Thomas Gannon	New York, N. Y	Presses	July 25, 1865.
49,047	Webster, Thomas B., assignor to self and Thomas Gannon	New York, N. Y	Presses, screw	July 25, 1865.
2,111	Webster, Thomas B., assignor to self and Thomas Gannon	New York, N. Y	Presses, screw (Reissue)	Nov. 21, 1865.

47,477	Webster, William	Middletown, Ohio	Rubber, India, packing for	Apr. 25, 1865.
46,865	Weed, Alfred, assignor to self and Lewis J. Bird	Boston, Mass	Files, machine for cutting	Mar. 14, 1865.
50,057	Weed, Fitch	Middleboro', Mass	Shoes	Sept. 19, 1865.
49,811	Weed, Samuel S	Stoneham, Mass	Hides, apparatus for removing hair and lime from	Sept. 5, 1865.
49,839	Weed, Samuel S., assignor to self, E. M. Stevens, and J. L. Hall	Stoneham, Mass	Hides, apparatus for removing hair from	Sept. 5, 1865.
46,512	Weeks, John H	Philadelphia, Pa	Window sash, retainer for	Feb. 21, 1865.
2,017	Weeks, John J., assignor through mesne assignment to Andrew Whiteley.	Springfield, Ohio	Harvesters of grain and grass (Division C of reissue)	June 27, 1865.
49,459	Wehr, John	Roanoke, Ind	Leather, harness, machine for cutting	Aug. 15, 1865.
	Weil, J., *et al.* (*See* Liebermann, Henry, assignor.)			
49,182	Weiland, Warner	Dedham, Mass	Looms, picker-staff, connection in	Aug. 1, 1865.
50,997	Weild, William	Great Britain	Rollers, fluted, machinery for making	Nov. 14, 1865.
50,753	Weimer, Peter L	Lebanon, Pa	Truck irons, apparatus for bending and punching	Oct. 31, 1865.
50,754	Weimer, Peter L	Lebanon, Pa	Punching, apparatus for	Oct. 31, 1865.
50,755	Weimer, Peter L	Lebanon, Pa	Drawheads for railroad cars, apparatus for bending and punching the frames of.	Oct. 31, 1865.
50,756	Weimer, Peter L	Lebanon, Pa	Drawhead plates, bending and punching	Oct. 31, 1865.
50,757	Weimer, Peter L	Lebanon, Pa	Hooks, bending and punching	Oct. 31, 1865.
50,758	Weimer, Peter L	Lebanon, Pa	Chain-links, apparatus for bending	Oct. 31, 1865.
50,781	Weimer, Peter L., assignor to Aurora Iron Company	Lebanon, Pa	Tubes, lap-welded, machine for finishing	Oct. 31, 1865.
46,285	Weir, William S., jr	Monmouth, Ill	Plough, corn	Feb. 7, 1865.
	Weir, W. S., *et al.* (*See* Ochiltree & Johnson, assignors.)			
45,945	Weissenborn, Edward	Hudson City, N. J	Oil cups	Jan. 17, 1865.
45,777	Weitling, William	New York, N. Y	Sewing machine	Jan. 3, 1865.
46,513	Weitling, William	New York, N. Y	Sewing machines, device for equalizing the delivery of the thread from the shuttles and spools of.	Feb. 21, 1865.
49,324	Weitman, A	West Union, Iowa	Horseshoes	Aug. 8, 1865.
49,812	Weitman, Augustus	West Union, Iowa	Horseshoes	Sept. 5, 1865.
51,636	Weitman, C	Hazelton, Iowa	Tire, device for shrinking	Dec. 19, 1865.
50,667	Welch, Daniel, and William W. Armington, assignors to George E. Mitchell.	Lowell, Mass	Saws, hand	Oct. 24, 1865.
49,325	Welch, H. H	Athens, Ohio	Heater, fireplace	Aug. 8, 1865.
49,183	Welch, Thomas	Churchville, N. Y	Harvesters	Aug. 1, 1865.
49,184	Welch, Thomas	Churchville, N. Y	Reaping and mowing machine	Aug. 1, 1865.
49,185	Welch, Thomas	Churchville, N, Y	Crank-pin boxes	Aug. 1, 1865.
50,973	Welding, John	Cincinnati, Ohio	Washing machine	Nov. 14, 1865.
46,165	Welham, Thomas	Washington, D. C	Engines, steam	Jan. 31, 1865.
46,166	Welham, Thomas	Washington, D. C	Shafting, universal	Jan. 31, 1865.
46,167	Welham, Thomas	Washington, D. C	Brush, hydraulic	Jan. 31, 1865.
47,236	Welham, Thomas	Washington, D. C	Screw, machine for shaping and pressing	Apr. 11, 1865.
51,502	Weller, H., and J. E. Hatcher	Fultonham, Ohio	Sugar, manufacture of	Dec. 12, 1865.
	Wellington, T. W. (*See* Smith, Moore, assignor.)			
49,813	Wellman, C. H	New York, N. Y	Stirrup-fastening	Sept. 5, 1865.
48,751	Wellman, Marshall, and James Old	Pittsburg, Pa	Stoves, coal	July 11, 1865.
48,752	Wellman, Marshall, and James Old	Pittsburg, Pa	Fireplace	July 11, 1865.
	Wellman, Marshall D., and Isaac Myers. (*See* Myers & Wellman.)			
46,600	Wellman, M. J., and J. J. Greenough	New York, N. Y	Lamp shades. (Antedated February 16, 1865)	Feb. 28, 1865.
49,018	Wells, Charles, and Henry Barth	Cincinnati, Ohio	Paper, machine for cutting	July 25, 1865.
50,058	Wells, Charles S	Chicopee, Mass	Stamps, postage and revenue, instrument for cancelling	Sept. 19, 1865.
51,766	Wells, Joseph	New York, N. Y	Sifter, flour and sauce	Dec. 26, 1865.
49,326	Wells, Leonard	New York, N. Y	Shells, explosive, for ordnance. (Antedated July 28, 1865)	Aug. 8, 1865.
51,503	Wells, M. D	Morgantown, W. Va	Rakes, horse	Dec. 12, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
51,504	Wells, Oliver D	Westerley, R. I	Ships, apparatus for the ventilation of	Dec. 12, 1865.
48,609	Wells, R. G	Plumer, Pa	Drill	July 4, 1865.
45,778	Wells, R. T. M	Franklin Centre, Vt	Cars, railroad	Jan. 3, 1865.
48,467	Wells, Walter S., and Wells, S. B	New York, N. Y Middleburg, N. Y	Machinery, mode of driving	June 27, 1865.
	Wells, Walter S., and Samuel R. Percy. (*See* Percy & Wells.)			
51,248	Wells, William C	Newark, N. J	Drill-gauge	Nov. 28, 1865.
	Welsh, J. A., and J. B. Gowdy. (*See* Gowdy & Welsh.) Reissue.			
49,814	Welsh, Joseph	Philadelphia, Pa	Looms	Sept. 5, 1865.
51,525	Wendell, George S., assignor to J. Horace Taylor	New York, N. Y	Scoop and flour sifter	Dec. 12, 1865.
50,427	Wendell, Isaac P., and Stephen Ustick, assignors to Isaac P. Wendell.	Philadelphia, Pa	Cars, railroad, pedestals for	Oct. 10, 1865.
49,201	Wendrem, James C., assignor to Wheeler, Mellick & Co. and E. Wackerhagen.	Albany, N. Y	Paint, composition for	Aug. 1, 1865.
2,162	Wendt, Rudolph	New York, N. Y	Spoon handle (Design)	Aug. 8, 1865.
2,172	Wendt, Rudolph	New York, N. Y	Spoon handle	Sept. 12, 1865.
48,855	Wenger, Henry	Farmersville, Pa	Water wheels	July 18, 1865.
47,673	Wensley, James	New Brunswick, N. J	Sewing machines, means for carrying and operating the shuttles in.	May 9, 1865.
	Wenzel, Theodore, and Charles. (*See* Beekman, A., assignor.)			
49,327	Werner, John, jr	Prairie du Sac, Wis	Boiler tubes, tool for scaling. (Antedated July 26, 1865)	Aug. 8, 1865.
50,191	Werner, John, jr	Prairie du Sac, Wis	Harvesting machines	Sept. 26, 1865.
45,779	Werm, P	Manchester, Mich	Motion, converting rotary into reciprocating	Jan. 3, 1865.
48,468	Werum, P	Berlin, Ohio	Stave machines	June 27, 1865.
50,526	Wesener, Christopher	Cincinnati, Ohio	Vinegar, apparatus for making	Oct. 17, 1865.
	Wesson, D. B., and H. Smith. (*See* Smith & Wesson.)			
47,144	Wesson, Lorenzo	Chillicothe, Ohio	Musical instruments, eletro-magnetic	Apr. 4, 1865.
49,575	West, Amos	Pontiac, Mich	Sawing, working power for	Aug. 22, 1865.
49,048	West, Hiram E., assignor to Oliver Carpenter	Attleboro', Mass	Hats and bonnets, machine for pressing	July 25, 1865.
49,049	West, Hiram E., assignor to Erastus P. Carpenter	Attleboro', Mass	Bonnets and hats, apparatus for embossing	July 25, 1865.
45,780	West, John B	New York, N. Y	Garment measuring. (Antedated September 8, 1862)	Jan. 3, 1865.
	West, J. I., and J. O., *et al.* (*See* Rugg, Datus E., assignor.)			
	West, J. I., and J. O. (*See* Burnham, Oliver R., assignor.)			
48,469	West, Josiah M	Wilmington, Ohio	Churns	June 27, 1865.
49,942	West, Levi H	Cambridge, Mass	Carriages, railway	Sept. 12, 1865.
47,143	West, True	Roxbury, Mass	Carriages, railway	Apr. 4, 1865.
	West, True, and Elias H. Derby. (*See* Derby & West.)			
46,738	Westbrook, C. L	New York, N. Y	Planter, corn	Mar. 7, 1865.
46,739	Westcott, Amos	Syracuse, N. Y	Churns	Mar. 7, 1865.
46,740	Westcott, Amos	Syracuse, N. Y	Bolts for doors	Mar. 7, 1865.
47,885	Westcott, Amos	Syracuse, N. Y	Cranks to machinery, attaching	May 23, 1865.
48,856	Westcott, Amos	Syracuse, N. Y	Fastener, sash	July 18, 1865.
47,145	Westcott, Henry P	Seneca Falls, N. Y	Churns	Apr. 4, 1865.
48,878	Westcott, Nathaniel W., and Westcott, Henry L., assignors to James G. Payson	Providence, R. I Charles River, Mass	Knitting shoe lacings, &c., machines for	July 18, 1865.

	Westerman, James, and John S. Fisk. (*See* Fisk & Westerman.)			
	Westerman, James, and John S. Fisk. (*See* Fisk & Westerman.)			
50,318	Westhead, Marcus Brown	Great Britain	Tapes, ribbons, and threads for use, device for arranging	Oct. 3, 1865.
48,857	Westinghouso, G	Schenectady, N. Y.	Sawing machines	July 18, 1865.
50,759	Westinghouse, George, jr	Schenectady, N. Y.	Engines, steam, rotary	Oct. 31, 1865.
47,478	Westlako, William	Chicago, Ill	Lanterns, machine for making	Apr. 25, 1865.
48,858	Westlake, William	Chicago, Ill	Lanterns	July 18, 1865.
50,192	Westlake, William	Chicago, Ill	Lanterns	Sept. 26, 1865.
50,538	Westlake, William, assignor to self, James E. Cross, and James F. Lane.	Chicago, Ill	Lanterns, manufacturing	Oct. 17, 1865.
51,526	Westlake, William, assignor to Cross, Lane & Westlake	Chicago, Ill	Lanterns	Dec. 12, 1865.
50,646	Weston, Charles T	Scranton, Pa	Mills, grinding	Oct. 24, 1865.
48,138	Weston, James W., and Thomas B. Stanley, assignors to James W. Weston.	New York, N. Y	Legs, artificial	May 30, 1865.
46,038	Wetherill, Charles M	Lafayette, Ind	Stamps, &c., method of inking	Jan. 24, 1865.
	Wetmore, A. R., *et al.* (*See* Quann & Smith, assignors.)			
47,176	Wetmore, J. W	Erie, Pa	Fireplace with gridiron attachment, movable	Apr. 4, 1865.
	Wetergell, G., *et al.* (*See* Janes, Thomas J., assignor.)			
48,003	Wetzel, John	Motthaven, N. Y	Window blinds, locking and stopping	May 30, 1865.
2,238	Weyman, William P. and Benjamin F	Pittsburg, Pa	Trade mark (Design)	Dec. 26, 1865.
51,767	Whalen, Seth	Burnt Hills, N. Y	Calipers	Dec. 26, 1865.
47,059	Whaley, Barnett B	Brooklyn, N. Y	Flask pins	Mar. 28, 1865.
47,237	Wharton, William, jr	Philadelphia, Pa	Ice, machine for levelling and smoothing	Apr. 11, 1865.
48,470	Wharton, William, jr	Philadelphia, Pa	Railroad switches	June 27, 1865.
48,859	Wharton, William, jr	Philadelphia, Pa	Railway frog	July 18, 1865
49,668	Wharton, William, jr	Philadelphia, Pa	Railroad switch	Aug. 29, 1865
51,373	Wharton, William, jr	Philadelphia, Pa	Railroad switch	Dec. 5, 1865.
	Wharton, William, jr. (*See* Howson, Henry, assignor.)			
	Wharton, William, jr., *et al.* (*See* Weber, Jacob, assignor.)			
	Wheadon, Charles H. (*See* Noyes, William H., assignor.)			
49,186	Wheaton, Milton A	Suisun City, Cal	Harvesting machines	Aug. 1, 1865.
	Wheeler & Wilson Sewing Machine Company. (*See* Marsh, Clark, assignor.			
	Wheeler, A. (*See* Hull, Livoras, assignor.) Reissue.			
	Wheeler, Alfred F., and Louis Boch. (*See* Boch & Wheeler.)			
	Wheeler, Cyrenus, jr. (*See* Forbush, E. B., assignor.) Reissue.			
	Wheeler, Cyrenus, jr. (*See* Forbush, E. B., assignor.) Reissue.			
	Wheeler, Cyrenus, jr. (*See* Forbush, E. B., assignor.) Reissue.			
	Wheeler, Cyrenus, jr. (*See* Forbush, E. B., assignor.) Reissue.			
	Wheeler, Cyrenus, jr. (*See* Forbush, E. B., assignor.) Reissue.			
	Wheeler, Cyrenus, jr. (*See* Forbush, E. B., assignor.) Reissue.			
	Wheeler, Cyrenus, jr. (*See* Forbush, E. B., assignor.) Reissue.			
	Wheeler, Cyrenus, jr. (*See* Forbush, E. B., assignor.) Reissue.			
47,886	Wheeler, Elbridge	Feltonvillo, Mass	Rolling-mill	May 23, 1865.
45,781	Wheeler, Alonzo S	Westport, Conn	Buttons	Jan. 3, 1865.
50,794	Wheeler, Alonzo S	Westport, Conn	Buttons, composition for	Nov. 14, 1865.
46,286	Wheeler, Henry F	Boston, Mass	Fire-arms, breech-loading, magazine	Feb. 7, 1865.
50,760	Wheeler, Henry F	Boston, Mass	Fire-arms, breech-loading	Oct. 31, 1865.
	Wheeler, John B., *et al.* (*See* Bryant, William M., assignor.)			
48,122	Wheeler, Jonathan	Athol, Mass	Bootjack	June 6, 1865.
	Wheeler, Mellick & Co. (*See* Wendrem, James C., assignor.)			

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,479	Wheeler, Norman W	Brooklyn, N. Y	Boats, ferry, trainway for	Apr. 25, 1865.
47,480	Wheeler, Norman W	Brooklyn, N. Y	Condensers, tubular	Apr. 25, 1865.
47,481	Wheeler, Norman W	Brooklyn, N. Y	Berths, movable	Apr. 25, 1865.
47,482	Wheeler, Norman W	Brooklyn, N. Y	Boats, steam, and other vessels, landing platform for	Apr. 25, 1865.
51,249	Wheeler, Norman W	Brooklyn, N. Y	Flue cleaners	Nov. 28, 1865.
2,158	Wheeler, Russell, and Stephen A. Bailey	Utica, N. Y	Stove, cook	Aug. 1, 1865.
48,778	Wheeler, S. H., assignor to self, R. Hedden, C. T. Lee, A. G. Townsend, D. Henderson, J. T. Stillwell, T. J. Martin, and J. Sullivan.	Dowagiac, Mich	Faucets, measuring	July 11, 1865.
50,210	Wheeler, S. H., assignor to self, A. G. Townsend, J. Stillwell, R. Hedden, E. P. Townsend, C. T. Lee, and J. Sullivan.	Dowagiac, Mich	Hay forks, horse	Sept. 26, 1865.
	Wheeler, Thomas B., deceased, by Rebecca C. Wheeler, administratrix.	Albany, N. Y	Sieves, grain (Extension)	Nov. 29, 1865.
45,783	Wheeler, William	Poultney, Vt	Stove	Jan. 3, 1865.
47,060	Wheeler, William A	New York, N. Y	Inkstand, fountain, operating parts of a	Mar. 28, 1865.
49,328	Wheeler, W. P	Louisville, Ky	Evaporating and distilling apparatus	Aug. 8, 1865.
50,761	Wheeler, Zenas	San Francisco, Cal	Shafts, fastening wheels and pulleys to	Oct. 31, 1865.
51,637	Wheeler, Zenas, and Phineas M. Randall	San Francisco, Cal	Mill, quartz-grinding	Dec. 19, 1865.
46,741	Wheelock, Jay	San Francisco, Cal	Trap, animal	Mar. 7, 1865.
51,250	Wheelock, Jerome	Worcester, Mass	Piston, packing	Nov. 28, 1865.
47,248	Wheelock, Luke, assignor to self and O. B. Leavenworth	New Haven, Conn	Syringes	Apr. 11, 1865.
49,943	Whelpley, James D	Boston, Mass	Fertilizer	Sept. 12, 1865.
48,226	Whelpley, J. D., and Jacob J. Storer	Boston, Mass	Metals from ores, apparatus for separating	June 13, 1865.
49,187	Whelpley, J. D., and Jacob J. Storer	Boston, Mass	Mills, stamping and crushing	Aug. 1, 1865.
50,975	Whelpley, J. D., and Jacob J. Storer	Boston, Mass	Quartz crushers	Nov. 14, 1865.
50,976	Whelpley, J. D., and Jacob J. Storer	Boston, Mass	Steel, cast, or cast iron, with wrought or cast-iron surfaces, process for uniting.	Nov. 14, 1865.
	Whipple, H. J. P., and John E. Parker. (*See* Cinquino, Pietro, ass'r.)			
50,647	Whipple, Milton D	Boston, Mass	File-cutting machines	Oct. 24, 1865.
1,881	Whipple, M. D., assignor through mesne assignments to the Whipple File Manufacturing Company.	Cambridge, Mass	Files, machines for cutting (Reissue)	Feb. 21, 1865.
48,753	Whitaker, Daniel	Roxbury, Mass	Soap frames, construction of	July 11, 1865.
47,238	Whitall, John M	Philadelphia, Pa	Jars, fruit, stopper for	Apr. 11, 1865.
50,291	Whitcomb, James O	New York, N. Y	Dental operating machines	Oct. 3, 1865.
47,350	White, Albert M	Port Chester, N. Y	Fire-arms, breech-loading	Apr. 18, 1865.
47,157	White, Albert M., assignor to self and Barnard Larvery	Port Chester, N. Y	Brush	Apr. 4, 1865.
49,329	White, Ambrose J	New York, N. Y	Gas retorts, method of removing incrustation from	Aug. 8, 1865.
46,039	White, Benjamin C	Richmond, Ind	Mills, fanning	Jan. 24, 1865.
	White, B. C., *et al.* (*See* Veregge, H. W., assignor.)			
46,287	White, George W	New York, N. Y	Ores, apparatus for calcining	Feb. 7, 1865.
49,208	White, James	Cleveland, Ohio	Wrench	Aug. 1, 1865.
47,146	White, Joseph F	Keene, N. H	Pumps	Apr. 4, 1865.
49,815	White, Joseph P	New York, N. Y	Presses, baling	Sept. 5, 1865.
46,411	White, Martin V. B	Troy, N. Y	Cartridge box	Feb. 14, 1865.
49,944	White, Orsamus A., and J. W. Bostwick	Norwalk, Ohio	Horse-power for sawing machines	Sept. 12, 1865.

50,292	White, Orsamus A., and J. W. Bostwick	Norwalk, Ohio	Sawing machines	Oct. 3, 1865.
48,610	White, Peregrine	Dixmont Centre, Me	Buckle	July 4, 1865.
50,310	White, Robert, assignor to Fennalds & Clark	Kingston, Canada West	Lamp cleaner	Oct. 3, 1865.
1,928	White, Rollin	Springfield, Mass	Fire-arm, revolving ... Division 1 of reissue	Apr. 4, 1865.
50,527	White, Stephen D	Centralia, Ill	Valves, slide	Oct. 17, 1865.
	White, Thomas H. (*See* Harrington, George W., assignor.)			
49,595	White, William B., assignor to Egbert S. Richards	N. Attleboro', Mass	Buttons	Aug. 22, 1865.
48,471	Whitefield, Edwin	Buffalo, N. Y	Printing fluid	June 27, 1865.
	Whiteley, Andrew. (*See* Weeks, John J., assignor.) Reissue.			
50,977	Whiteley, Edward	Cambridge, Mass	Ranges	Nov. 14, 1865.
	Whiteley, William N., Jerome Fassler, and Oliver S. Kelley	Springfield, Ohio	Mills for grinding fruit, grain, &c ... (Disclaimer)	Apr. 24, 1865.
49,669	Whiteley, William N., jr	Springfield, Ohio	Harvesters, automatic rakes for	Aug. 29, 1865.
51,374	Whiteley, William N., jr	Springfield, Ohio	Harvesters	Dec. 5, 1865.
	Whiteley, William N., jr. (*See* Steadman, Thomas S., assignor.) Reissue.			
	Whiten, Elijah	Hingham, Mass	Sawing volutes, machine for ... (Extension)	Sept. 29, 1865.
50,059	Whitfield, Joseph H	Buffalo, N. Y	Trunks. (Antedated September 15, 1865)	Sept. 19, 1865.
48,816	Whiting, E. G	Northfield, Minn	Ploughs	Sept. 5, 1865.
51,768	Whiting, J. B	Ripon, Wis	Seeding machines	Dec. 26, 1865.
	Whitmore, J., *et al.* (*See* Choate, William, assignor.)			
47,147	Whitmore, William H	Boston, Mass	Sugar in blocks, apparatus for dividing	Apr. 4, 1865.
	Whitney, E. P., *et al.* (*See* Lyon, B. U., assignor.)			
48,330	Whitney, Henry A	Brooklyn, N. Y	Unloading or storing freight, device for	June 20, 1865.
50,060	Whitney, Henry C	Coxsackie, N. Y	Rakes, horse	Sept. 19, 1865.
46,742	Whitney, John H	Sandisfield, Mass	Yokes, ox	Mar. 7, 1865.
51,396	Whitney, Ruel W., and F. M. Hardison, assignors to selves and Abner C. Stockin.	South Berwick, Me	Mowing machines	Dec. 5, 1865.
47,887	Whitson, Thomas	Woodstock, Ill	Stove-pipe drum	May 23, 1865.
48,754	Whittlesey, Newton P	West Meriden, Conn	Toy gun	July 11, 1865.
	Whittemore, David. (*See* Landfear, William R., assignor.)			
46,839	Whittemore, John R	Chicopee Falls, Mass	Straw cutter	Mar. 14, 1865.
50,193	Whittier, Joseph G., and Thomas M. Powell	Attica, Ind	Curtain clasp	Sept. 26, 1865.
47,239	Whittle, Joseph	Philadelphia, Pa	Knitting machines	Apr. 11, 1865.
	Whyte, Ebenezer, and Richard S. Rhodes. (*See* Rhodes & Whyte.)			
51,638	Wickersham, John	Baltimore, Md	Furnace doors	Dec. 19, 1865.
48,004	Wicks, George Washington	New York, N. Y	Wells, artesian, boring machine for	May 30, 1865.
48,472	Wicks, George W	Brooklyn, N. Y	Roller dies	June 27, 1865.
47,351	Wieland, Benjamin	Orangeville, Ill	Harvesters	Apr. 18, 1865.
49,019	Wieland, Benjamin	Orangeville, Ill	Cup, batter	July 25 1865.
49,460	Wieland, Benjamin	Orangeville, Ill	Seeding machines	Aug. 15, 1865.
48,331	Wigal, James P	Neoga, Ill	Steam-pressure gauges	June 20, 1865.
46,428	Wiggins, Charles P., assignor to Case, Marsh & Co	Indianapolis, Ind	Sawing machines	Feb. 14, 1865.
48,879	Wiggins, Charles P., assignor to Case, Marsh & Co	Indianapolis, Ind	Sawing machines	July 18, 1865.
47,591	Wilber, John D	Pleasant Plains, N. Y	Press, baling, horizontal	May 2, 1865.
47,483	Wilbur, Edward R	New York, N. Y	Bottle stopper	Apr. 25, 1865.
46,168	Wilcox, H. W	Columbus, Pa	Bucket, folding	Jan. 31, 1865.
	Wilcox, J., & Co. *et al.* (*See* Rugg, Datus E., assignor.)			
49,020	Wilcox, L. N	Pittsburg, Pa	Distillation of hydro-carbons, apparatus for separating the products of.	July 25, 1865.
49,461	Wilcox, Martin	Sacramento, Cal	Pumps, steam	Aug. 15, 1865.
49,576	Wilcox, Richard C	Guilford, Conn	Sorghum, apparatus for stripping	Aug. 22, 1865.
1,942	Wilcox, Stephen, jr	Westerley, R. I	Air engines, hot ... (Reissue)	Apr. 25, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
47,759	Wilcox, Stephen, jr	Westerly, R. I	Air engines, hot	May 16, 1865.
50,061	Wilcox, Stephen, jr	Westerly, R. I	Air engines	Sept. 19, 1865.
50,062	Wilcox, Stephen, jr	Westerly, R. I	Air engines, hot	Sept. 19, 1865.
51,395	Wilcox, Stephen, jr., assignor to self and Charles Potter, jr	Westerly, R. I	Steam generators	Dec. 5, 1865.
46,840	Wild, J. F	New York, N. Y	Buttons	Mar. 14, 1865.
	Wilder, B. A. (*See* Ayres, S. K., assignor.)			
46,514	Wilder, Benjamin	North Scituate, Mass	Labels, adhesive, apparatus for softening the gum of	Feb. 21, 1865.
47,760	Wilder, C. H	Argyle, Wis	Breast pumps	May 16, 1865.
47,888	Wilder, Moses G	West Meriden, Conn	Metal, sheet, forming tubes of	May 23, 1865.
50,194	Wilder, R. A	Cressona, Pa	Wells, oil, packing tubes of	Sept. 26, 1865.
46,040	Wilder, Warren	Wilkinsonville, Mass	Looms, shuttles for	Jan. 24, 1865.
45,782	Wilds, Thomas, and James McGinniss	Muscatine, Iowa	Cultivators	Jan. 3, 1865.
46,962	Wilds, Thomas	Troy, N. Y	Neck-ties	Mar. 21, 1865.
	Wiley, J. A., *et al.* (*See* Stone, J. M., assignor.)			
	Wiley, J. A., *et al.* (*See* Stone, J. M., assignor.)			
49,817	Wiley, Jonas T	Claytown, Iowa	Registers, grain	Sept. 5, 1865.
51,375	Wiley, S. H	Salisbury, N. C	Draughting scales	Dec. 5, 1865.
51,195	Wiley, William, jr	Kokomo, Ind	Buckle fastening	Sept. 26, 1865.
50,865	Wilhelm, J. H	Chicago, Ill	Lamp, furnace, hot blast	Nov. 7, 1865.
51,769	Wilhelm, J. H	Chicago, Ill	Pumps, air	Dec 6, 1865.
51,770	Wilhelm, J. H., and Frederick G. Ensign	Chicago, Ill	Caster for furniture	Dec. 6, 1865.
	Wilkins, Erastus. (*See* Aiken, John, assignor.)			
	Wilkins, Henry, and John N. Snowden. (*See* Snowden & Wilkins.)			
47,889	Wilkinson, Warren H	Springfield, Mass	Harness, artillery, valise for	May 23, 1865.
49,021	Willard, Charles	Newtown, Pa	Hay spreading machines	July 25, 1865.
49,462	Willard, Charles W	Chicago, Ill	Hammers, steam, valve gear for	Aug. 15, 1865.
	Willard, G., *et al.* (*See* Shaw, William A., assignor.)			
47,761	Willard, Morgan	Cincinnati, Ohio	Hoisting machine	May 16, 1865.
50,408	Willcox, A. O	Port Richmond, N. Y	Stove	Oct. 10, 1865.
	Willey, O. S. (*See* Skinner, E. W., assignor.)			
48,123	Williams, Albert	Norwich, Conn	Latches, knob	June 6, 1865.
51,406	Williams, A. C., assignor to J. H. Shear and J. Packer	Albany, N. Y	Stoves, cooking	Dec. 5, 1865.
2,219	Williams, Charles	Manchester, N. H	Stove, parlor (Design)	Nov. 7, 1865.
46,743	Williams, E. A	Columbus, Ohio	Mills, sugar cane	Mar. 7, 1865.
49,330	Williams, Elijah P	Buffalo, N. Y	Grain shovels. (Antedated August 4, 1865)	Aug. 8, 1865.
	Williams, Frederick H. (*See* Phelps, Benjamin C., assignor.)			
49,818	Williams, Henry	Kenosha, Wis	Seeding machines	Sept. 5, 1865.
51,376	Williams, H. B., and Joseph C. Wilson	Appleton, Wis	Drill, rock	Dec. 5, 1865.
46,744	Williams, Horace G	Hamilton, Iowa	Cradle, self-rocking	Mar. 7, 1865.
2,133	Williams, Irvin A	Utica, N. Y	Lamps, locomotive (Reissue)	Dec. 19, 1865.
47,484	Williams, J. E	Xenia, Ohio	Railroad chairs	Apr. 25, 1865.
	Williams, James M. (*See* Hasletine, John, assignor.)			
49,670	Williams, John	Shelburne, Mass	Squares, try	Aug. 29, 1865.
50,319	Williams, John	Montreal, Canada East	Furnace, puddling	Oct. 3, 1865.

49,331	Williams, John D	Allegheny, Pa	Iron, manufacture of. (Antedated July 9, 1865)	Aug. 8, 1865.
51,771	Williams, John D	Allegheny, Pa	Iron, manufacture of. (Antedated December 14, 1865)	Dec. 26, 1865.
2,073	Williams, John D	Allegheny, Pa	Iron, manufacture of (Reissue)	Sept. 19, 1865.
45,784	Williams, John H	Oakland, Cal	Window sash suspenders	Jan. 3, 1865.
51,505	Williams, John S	Chicago, Ill	Harvesters, corn	Dec. 12, 1865.
48,005	Williams, Lewis E	Peekskill, N. Y	Shell, explosive	May 30, 1865.
51,639	Williams, S. B	Leavenworth, Kansas	Locks, door, keepers for	Dec. 19, 1865.
	Williams, Stephen G., and Aaron Palmer. (*See* Palmer & Williams.) Extension.			
	Williams, Stephen G., and Aaron Palmer. (*See* Palmer & Williams.) Extension.			
51,377	Williams, U. B	Lowell, Mich	Presses, wool	Dec. 5, 1865.
2,132	Williams, William L	New York, N. Y	Splitting wood, machine for (Reissue)	Dec. 19, 1865.
51,506	Williams, William L., assignor to self and Thomas O. Conner	New York, N. Y	Splitting wood, machine for	Dec. 12, 1865.
46,977	Williamson, David, ass'r to Moores' Patent Fire-arms Company	Brooklyn, N. Y	Fire-arms, breech-loading	Mar. 21, 1865.
	Williamson, D. D., jr. (*See* Daft, Thomas B., assignor.)			
49,202	Williamson, George W., assignor to self and D. W. Lee	Gouldsborough, Pa	Barrel for holding petroleum	Aug. 1, 1865.
46,764	Williamson, J. H., assignor to self and Levi Beemer	Branchville, N. J	Pumps, submerged	Mar. 7, 1865.
50,196	Willis, Frederic R	Waltham, Mass	Skate sharpeners	Sept. 26, 1865.
45,888	Willis, R. B	Rochester, N. Y	Thill attachments	Jan. 10, 1865.
48,124	Willoughby, J. D	Washington, D. C	Steering boats from another boat, device for	June 6, 1865.
49,671	Willmot, George R	Meriden, Conn	Bottles, stoppers for	Aug. 29, 1865.
50,409	Wills, William W	Janesville, Wis	Leverage	Oct. 10, 1865.
47,485	Willson, Henry F	Elyria, Ohio	Breast straps, shields for	Apr. 25, 1865.
45,785	Wilmarth, Seth	Boston, Mass	Bolts by hydraulic pressure, machine for drawing	Jan. 3, 1865.
51,378	Wilmarth, Seth	Boston, Mass	Turrets, monitor, by hydraulic pressure, means of raising	Dec. 5, 1865.
	Wilmot, Asa. (*See* Tileston, George W., assignor.)			
48,860	Wilmot, Samuel R	Brooklyn, N. Y	Burners, kerosene	July 18, 1865.
47,249	Wilson, Albert A., assignor to self and Hoffman Atkinson	Green Point, N. Y	Well boring devices	Apr. 11, 1865.
47,907	Wilson, Albert A., assignor to self and Hoffman Atkinson	Green Point, N. Y	Tools, boring, coupling shafts of	May 23, 1865.
	Wilson, Allen B	Waterbury, Conn	Sewing machines (Extension)	July 24, 1865.
	Wilson, Allen B	Waterbury, Conn	Stitches by machinery, process of forming (Extension)	July 24, 1865.
49,332	Wilson, Charles A	Cincinnati, Ohio	Warming apparatus, steam	Aug. 8, 1865.
50,294	Wilson, Charles A	Cincinnati, Ohio	Warming apparatus, steam	Oct. 3, 1865.
50,539	Wilson, D. A., assignor to self and Charles P. Higbee	Cambridge, Vt	Tool, clinching and nipping	Oct. 17, 1865.
48,634	Wilson, Daniel T., assignor to self and R. Hoffheins	Harrisburg, Pa	Rosin, substitute for	July 4, 1865.
50,994	Wilson, E. W., and John E. Erwin, assignors to E. W. Wilson	Springfield, Mass	Car coupling	Nov. 14, 1865.
46,601	Wilson, George W	Chelsea, Mass	Furnace, air-heating	Feb. 28, 1865.
51,507	Wilson, George W	Galesburg, Ill	Stalks and stubble in the field preparatory to ploughing, machine for cutting.	Dec. 12, 1865.
50,762	Wilson, Jesse F	Lewisville, Ind	Wagon brakes	Oct. 31, 1865.
	Wilson, Joseph C., and H. B. Williams. (*See* Williams & Wilson.)			
45,889	Wilson, Joseph F., and James C. Bartlett	Boston, Mass Charlestown, Mass	Switches, mode of operating	Jan. 10, 1865.
	Wilson, J. W. (*See* Pomeroy, William W., assignor.)			
48,880	Wilson, Levi, assignor to J. Nelson Buell	Middletown, Conn	Pumps and other oscillating rods, protectors for. (Antedated July 14, 1865.)	July 18, 1865.
46,412	Wilson, Richardson	Fowler, N. Y	Ploughs, wheeled	Feb. 14, 1865.
46,745	Wilson, Riley P	New York, N. Y	Ores, roasting and desulphurizing	Mar. 7, 1865.
	Wilson, Samuel C., and John Bradshaw. (*See* Bradshaw & Wilson.)			
	Wilson, Stephen D., and James W. Ward. (*See* Ward & Wilson.)			

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
48,125	Wilson, Thomas B., and William R. Shaw	Meadville, Pa	Furnaces, boiler	June 6, 1865.
48,497	Wilson, William, jr., assignor to self and Charles Green	Wilmington, Del	Barrels, casks, &c., metallic hoops for	June 27, 1865.
51,667	Wilson, William, jr., assignor to self and Charles Green	Wilmington, Del	Boxes, sheet-metal machinery for manufacturing	Dec. 19, 1865.
51,640	Wilson, William D.	Newark, N. J	Propellers, marine	Dec. 19, 1865.
49,463	Wilson, W. T., and Henry Flather	Bridesburg, Pa	Fire-arms, breech-loading	Aug. 15, 1865.
	Wilstach, William P. (*See* Morgenstern, William, assignor.)			
46,515	Wiltsie, J. M	Pittsford, N. Y	Fertilizers, apparatus for distributing	Feb. 21, 1865.
	Wimer, William, and O. H. Brewer. (*See* Brewer & Wimer.)			
46,516	Winans, William Louis	Baltimore, Md	Ordnance on gunboats, &c., operating	Feb. 21, 1865.
	Winch, J. R. (*See* Hosmer, George, assignor.) Design.			
49,672	Winchell, J. B	Chicago, Ill	Washing machine	Aug. 29, 1865.
51,251	Winchester, Edward S	Boston, Mass	Carriage wheel	Nov. 28, 1865.
2,030	Winchester, Stephen S., assignor to E. H. and W. Winchester	Boston, Mass	Trade mark (Design)	Feb. 7, 1865.
46,413	Windship, George B	Boston, Mass	Bells, dumb, graduated	Feb. 14, 1865.
49,945	Windship, George B	Boston, Mass	Lifting apparatus	Sept. 12, 1865.
46,963	Wing, Abram	Mayville, N. Y	Mill-stones, dressing	Mar. 21, 1865.
49,203	Wing, Samuel, assignor to self and George R. Topliff	Monson, Mass	Valves, stop, machine for refitting	Aug. 1, 1865.
49,464	Winner, B. L	Belvidere, Ill	Churns	Aug. 15, 1865.
2,050	Winslow, A. P	Cleveland, Ohio	Cars, railroad, roof for (Reissue)	Aug. 8, 1865.
50,866	Winslow, Freeman	Marblehead, Mass	Heating soles and shoes, apparatus for	Nov. 7, 1865.
51,379	Winslow, Isaac	Philadelphia, Pa	Knife for removing green corn from the cob	Dec. 5, 1865.
	Winslow, Joseph L., *et al.* (*See* Langand, Gilman, assignor.)			
47,486	Winslow, T	Cleveland, Ohio	Ploughs	Apr. 25, 1865.
48,473	Winterburn, Andrew	Albany, N. Y	Reaping machine, guard-finger for	June 27, 1865.
2,078	Winterburn, Andrew	Albany, N. Y	Grates for furnaces (Reissue)	Sept. 26, 1865.
	Winters, C. J. (*See* Parke, A. W., assignor.)			
2,199	Wirz, A. H	Philadelphia, Pa	Trade mark (Design)	Oct. 10, 1865.
51,380	Wissler, Aaron	Clay township, Pa	Harvesters, guards or fingers for	Dec. 5, 1865.
50,293	Wissmann, Francis L	Philadelphia, Pa	Liquors, malt, apparatus for cooling	Oct. 3, 1865.
48,006	Wisewell, D. H., and George W. Shaw	Buffalo, N. Y	Wells, &c., drills for boring	May 30, 1865.
	Witbeck, Thomas, and Theodore Wallis. (*See* Wallis & Witbeck.)			
49,577	Witherell, L. R	Galesburg, Ill	Sugar-cane, instrument for stripping	Aug. 22, 1865.
49,673	Witmer, Tobias	Williamsburg, N. Y	Rakes, horse	Aug. 29, 1865.
48,755	Witsel, George L	Philadelphia, Pa	Knife polisher and grinder	July 11, 1865.
50,528	Witsel, George L	Philadelphia, Pa	Rolling pin	Oct. 17, 1865.
46,517	Witsill, George L., and Edward Burke	Philadelphia, Pa	Well borers	Feb. 21, 1865.
47,148	Witsill, George L., and Edward Burke	Philadelphia, Pa	Oil ejectors	Apr. 4, 1865.
48,007	Wittsueben August	New York, N. Y	Sewing machine	May 30, 1865.
50,763	Woeber, Gallus	Davenport, Iowa	Whiffletrees	Oct. 31, 1865.
48,227	Wolcott, H. H	Yonkers, N. Y	Cartridge retracter for breech-loading fire-arms	June 13, 1865.
46,169	Wolf, David	Lebanon, Pa	Reaping machines	Jan. 31, 1865.
51,772	Wolf, Jacob	Cleveland, Ohio	Swing, baby	Dec. 26, 1865.
46,414	Wolfe, Gurdon G	Troy, N. Y	Stove-pipe ventilator and draught damper	Feb. 14, 1865.
49,333	Wolfe, Gurdon G	Troy, N. Y	Stove, coal	Aug. 8, 1865.
49,465	Wolfinger, F. R	Vermont, Ill	Swings	Aug. 15, 1865.

	Wombaugh, Mahlon M. (*See* Robbins, Martin, assignor.)			
	Wonson, Augustus H., and James G. Tarr. (*See* Tarr & Wonson.)			
	Wonson, Augustus H., and James G. Tarr. (*See* Tarr & Wonson.)			
46,170	Wood, Alonzo	Henrietta, N. Y.	Harvesters	Jan. 31, 1865.
46,602	Wood, Barnabas	Albany, N. Y.	Teeth, plugging instruments for filling	Feb. 28, 1865.
47,158	Wood, Charles A., assignor to D. C. Hood and W. H. S. Jordan	Dorchester, Mass	Liquids, apparatus for eoneentrating	Apr. 4, 1865.
2,200	Wood, Charles B	New York, N. Y.	Lamp, eoaeh	Oct. 10, 1865.
45,786	Wood, Edwin A	Utica, N. Y.	Steam-pressure gauges	Jan. 3, 1865.
46,171	Wood, Enos D	Utica, N. Y.	Boilers, steam	Jan. 31, 1865.
46,288	Wood, Frederiek	Bridgeport, Conn	Wearing apparel, elasps for	Feb. 7, 1865.
50,648	Wood, Frederiek	Bridgeport, Conn	Carriage axle box	Oct. 24, 1865.
	Wood, Henry. (*See* Danfield, Samuel D., assignor.)			
48,142	Wood, James	Nottingham, England	Lamp burner	June 6, 1865.
47,240	Wood, James P	Philadelphia, Pa	Radiators, steam, automatic valve for	Apr. 11, 1865.
48,861	Wood, Joseph	Red Bank, N. J	Fluid ejectors	July 18, 1865.
49,188	Wood, Joseph S	Philadelphia, Pa	Gas regulator	Aug. 1, 1865.
48,474	Wood, L. H	Marlboro', Mass	Leather, machine for punching	June 27, 1865.
1,873	Wood, Robert, assignor to Henry I. Seymour	Troy, N. Y.	Chair seats (Reissue)	Feb. 14, 1865.
46,041	Wood, S. W	Cornwall, N. Y.	Steel, east, proecss for making	Jan. 24, 1865.
46,042	Wood, T. C	Augusta, Mich	Ladder, extension	Jan. 24, 1865.
46,841	Wood, W. Dewees	McKeesport, Pa	Furnace for polishing sheet iron	Mar. 14, 1865.
48,862	Wood, William W. W., and J. L. Lay	Philadelphia, Pa Buffalo, N. Y.	Gun, steam, submarine	July 18, 1865.
46,851	Wood, William W. W., and John L. Lay, assignors to Donald McKay.	United States navy	Boat, picket, and apparatus for diseharging torpedoes	Mar. 14, 1865.
46,852	Wood, William W. W., and John L. Lay, assignors to Donald McKay.	Buffalo, N. Y.	Torpedoes, submarine, apparatus for carrying and exploding	Mar. 14, 1865.
46,853	Wood, William W. W., and John L. Lay, assignors to Donald McKay	Philadelphia, Pa Buffalo, N. Y.	Shells or torpedoes, submarine, apparatus for operating	Mar. 14, 1865.
47,776	Wood, William W. W., and John L. Lay, assignors to Donald McKay	Philadelphia, Pa Buffalo, N. Y.	Shells, explosive, submarine	May 16, 1865.
51,641	Woodberry, Charles	Boston Mass	Stove for heating irons for tailors' and hatters' use	Dec. 19, 1865.
45,890	Woodburry, Daniel	Rochester, N. Y.	Derrieks and horse-powers	Jan. 10, 1865.
50,063	Woodbury, J. A. and G. E	East Cambridge, Mass	Bottle stopper	Sept. 19, 1865.
48,611	Woodbury, James A	Boston, Mass	Valves, slide	July 4, 1865.
46,043	Woodbury, Joseph P	Boston, Mass	Cars, railway, steam, street	Jan. 24, 1865.
48,008	Woodbury, Joseph P	Boston, Mass	Cars, railway, steam, street	May 30, 1865.
50,978	Woodbury, O. E	Madison, Wis	Mills, eane	Nov. 14, 1865.
49,819	Woodcock, John P	Bedford, N. Y.	Fastenings, gate	Sept. 5, 1865.
47,263	Woodford, Erastus S	Winchester, Conn	Yokes, ox	Apr. 11, 1865.
47,592	Woodford, Erastus S	Winstead, Conn	Yokes, ox	May 2, 1865.
	Woodman, Charles E. (*See* Hatfield, Charles B., assignor.)			
	Woodman, Charles E. (*See* Johnson, Charles H., assignor.)			
	Woodman, Charles E. (*See* Johnson, Charles H., assignor.)			
47,159	Woodman, Charles E., and Charles B. Hatfield, assignors to Charles E. Woodman.	Boston, Mass	Buckle	Apr. 4, 1865.
51,274	Woodman, Charles T., assignor to self and Charles E. Woodman.	Boston, Mass	Cocks, gauge	Nov. 28, 1865.
	Woodman, Eugene. (*See* Johnson, Charles H., assignor.)			
	Woodman, H. T. (*See* Shears, A. S., assignor.)			
50,064	Woodruff, Eber	Chicago, Ill	Water-closets, seats for	Sept. 19, 1865.
50,295	Woodruff, Elmer	Grand Rapids, Mich	Sorghum sirup, &c., kettle for evaporating	Oct. 3, 1865.
50,979	Woodruff, H. S	Janesville, Wis	Buckle, trace	Nov. 14, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
	Woodruff, J. H. (*See* Hutchinson, Charles B., assignor.)			
50,649	Woodruff, James O	Auburn, N. Y	Barrels, oil, &c., applying solutions to the interior and exterior of	Oct. 24, 1865.
	Woodruff, Lauren C., *et al.* (*See* Steele, John, assignor.)			
47,593	Woodruff, Lum	Ann Arbor, Mich	Planters, seed	May 2, 1865.
47,149	Woodruff, Orville O	Killingworth, Conn	Yokes, ox, bow-pin for	Apr. 4, 1865.
49,820	Woodruff, William D	Phelps, N. Y	Fence	Sept. 5, 1865.
	Woodruff, W. W., and F. H. Samson. (*See* Pond, Alvin, assignor.)			
48,498	Woods, E. P., and A. E. Blood, assignors to Woods, Sherwood & Co	Lowell, Mass / Lynn, Mass	Hooks and clamps, bench	June 27, 1865.
51,410	Woods, F. M	York, Ill	Pans, sheet-metal, machine for pressing	Oct. 10, 1865.
45,800	Woods, George, assignor to Mason & Hamlin	Cambridge, Mass	Musical instruments	Jan. 3, 1865.
49,355	Woods, George, assignor to Mason & Hamlin	Cambridge, Mass	Organs, cabinet	Aug. 8, 1865.
49,483	Woods, George, assignor to Mason & Hamlin	Cambridge, Mass	Musical instruments	Aug. 15, 1865.
47,594	Woods, William, and E. Smith	Worcester, Mass	Bedstead, spring	May 2, 1865.
46,415	Woods, William L	Washington, D. C	Files, paper	Feb. 14, 1865.
50,980	Woods, William L	Washington, D. C	Rulers, parallel	Nov. 14, 1865.
	Woods, Wm. L., and Geo. W. Frances. (*See* Frances & Woods.)			
	Woodward, A. and W. R. (*See* Chandler, M. and J. W., assignors.)			
48,009	Woodward, G. M	New York, N. Y	Pumps, air	May 30, 1865.
50,434	Woodward, John G	St. John, New Brunswick	Vessels, steam, &c., ventilating apparatus for	Oct. 10, 1865.
48,756	Woodward, Joseph, assignor to J. S. Utley	New York, N. Y	Ruler and paper cutter	July 11, 1865.
48,126	Woodward, J. N., and W. Holden	Aurora, Ill	Houses, hot, sashes for roofs of	June 6, 1865.
46,416	Woodward, L. W	North Adams, Mass	Steam traps	Feb. 14, 1865.
51,381	Woodworth, Alfred	North White Creek, N. Y	Jack, lifting	Dec. 5, 1865.
46,964	Woodworth, Orson H	Columbia City, Ind	Fence	Mar. 21, 1865.
	Woodworth, Wallace, and Wm. H. Perry. (*See* Perry & Woodworth.)			
50,867	Woolaver, John	Suisun, Cal	Bottle stopper	Nov. 7, 1865.
50,868	Woolaver, John	Suisun, Cal	Bottles, instrument for opening	Nov. 7, 1865.
2,070	Woolley, G. W. and W. P	Hartford, Conn	Coffin (Design)	May 16, 1865.
2,071	Woolley, G. W. and W. P	Hartford, Conn	Coffin (Design)	May 16, 1865.
47,762	Woolsey, I. B	Bloomfield, Iowa	Hame fastener	May 16, 1865.
47,890	Woolson Charles J	Cleveland, Ohio	Stove, cooking	May 23, 1865.
51,642	Woolworth, Isaac	New Haven, Conn	Dental purposes, manufacture of rubber for	Dec. 19, 1865.
	Woonsocket Rubber Company. (*See* Hoft, John F., assignor.)			
	Wooster, E. C. (*See* Robjohn, Thomas, assignor.)			
46,429	Wooster, Joab H., assignor to self and Robert Dunbar	Strykersville, N. Y	Water wheels	Feb. 14, 1865.
46,430	Wooster, Joab H., assignor to self and Robert Dunbar	Strykersville, N. Y	Water-wheel gates, governor for	Feb. 14, 1865.
	Wooton, William S., and David Brown. (*See* Brown & Wooton.)			
	Worcester, Benjamin, and J. Herbert Shedd. (*See* Shedd & Worcester.)			
1,896	Worden, Leonard J., assignor to self, Hicks, Wolfe & Co	Utica, N. Y	Metal, sheet, ware, casting bottoms on (Reissue)	Feb. 28, 1865.
49,189	Workman, William, and C. F. Swain	Ripon, Wis	Bed bottom	Aug. 1, 1865.
46,746	Worley, Adam	St. Paul, Minn	Stove, wood, twin	Mar. 7, 1865.
46,172	Wormser, Abraham	New York, N, Y	Shirts	Jan. 31, 1865.
46,747	Worrall, Thomas H	Manchester, N. H	Chuck, self-centring	Mar. 7, 1865.

48,612	Worrall, Thomas H	Lawrence, Mass	Chuck, or holder, self-centring	July 4, 1865.
	Worthington, N. E. (*See* Robinson, William P., assignor.)			
	Worthington, W. S., and Henry W. Adams. (*See* Adams & Worthington.) Reissue.			
49,488	Wothly, Jacques, assignor to J. G. de Silveria	Paris, France	Photographic process	Aug. 15, 1865.
47,062	Wright, Benjamin	Hudson, Mich	Washing machine	Mar. 28, 1865.
	Wright, Caleb, and E. D. Kimmey. (*See* Kimmey & Wright.)			
* 49,578	Wright, Charles D	Leesville, Conn	Water wheels	Aug. 22, 1865.
50,311	Wright, Edward, assignor to John Goulding	Worcester, Mass	Spinning, bobbin-holder for	Oct. 3, 1865.
47,763	Wright, E. M	Wilmington, Ohio	Churn dashers	May 16, 1865.
48,229	Wright, E. M., assignor to self and A. C. Diboll	Wilmington, Ohio	Planters, corn	June 13, 1865.
49,204	Wright, E. M., assignor to self and A. C. Diboll	Wilmington, Ohio	Cultivator and planter	Aug. 1, 1865.
46,965	Wright, George	Washington, D. C	Shells, explosive, time-fuzes for	Mar. 21, 1865.
47,674	Wright, George	Washington, D. C	Linch-pin	May 9, 1865.
49,957	Wright, George F., assignor to self and H. H. Waters	Clinton, Mass	Skirts, hoops, apparatus for clinching clasps on	Sept. 12, 1865.
49,190	Wright, George T., assignor to Charles W. Wright	Cincinnati, Ohio	Straw-cutter	Aug. 1, 1865.
48,613	Wright, Gilman F	Graniteville, Mass	Water wheels	July 4, 1865.
49,579	Wright, Jesse Thompson	Nashua, N. H	Crane, elevating	Aug. 22, 1865.
47,777	Wright, Lysander, assignor to Wright & Smith	Newark, N. J	Sawing machine, scroll	May 16, 1865.
50,981	Wright, Nelson	New York, N. Y	Photographic baths	Nov. 14, 1865.
46,289	Wright, Rufus	New York, N. Y	Pencil sharpener	Feb. 7, 1865.
49,022	Wright, R. C	Meadville, Pa	Journal boxes, railway	July 25, 1865.
50,982	Wright, Ransom C	Meadville, Pa	Journal boxes, railway	Nov. 14, 1865.
	Wright, R. H., and John W. Ingle. (*See* Ingle & Wright.)			
	Wright, Robert K., and Jonathan R. Supplee. (*See* Supplee & Wright.)			
48,332	Wright, Warren	Springfield, Ohio	Mills, flouring	June 20, 1865.
49,334	Wright, William	New York, N. Y	Engines, steam, portable	Aug. 8, 1865.
48,349	Wright, William A., and James Molyneux, assignors to the Bordentown Machine Company.	Bordentown, N. J	Saw-mills	June 20, 1865.
50,197	Wroten, John	Salisbury, Md.	Apple cutter and corer	Sept. 26, 1865.
	Wursthoff, Frederick. (*See* Murray, Edgar, assignor.)			
46,518	Wurtz, Henry	New York, N. Y	Barrels to hold oil, petroleum, &c., preparing	Feb, 21, 1865.
48,499	Wurtz, Henry, assignor to Wurtz Amalgamation Company	New York, N. Y	Gold and other precious metals from their ores, &c., extracting	June 27, 1865.
48,333	Wyatt, Robert	Brooklyn, N. Y	Fire-escape	June 20, 1865.
48,139	Wyatt, Robert, assignor to self and W. Larder	Brooklyn, N. Y	Engines, steam	June 6, 1865.
51,252	Wyckoff, Arcalous	Elmira, N. Y	Boring tubes, machines for	Nov. 28, 1865.
51,643	Wyckoff, Arcalous	Elmira, N. Y	Barrel machines	Dec. 19, 1865.
50,296	Wyckoff John N	New York, N. Y	Amalgamating gold and silver, process for	Oct. 3, 1865.
51,644	Wyckoff, William C	Brooklyn, N. Y	Furniture spring	Dec. 19, 1865.
49,580	Wyckoff, Wilson	Chagrin Falls, Ohio	Buckle, trace	Aug. 22, 1865.
	Wyllys, Newell	South Glastenbury, Conn	Spinning machines, drawing regulator for	Jan. 20, 1865.
	Wynne, John E. (*See* Doubler, J. W. H., assignor.) Extension.			
	Yale, B. Buchanan. (*See* Barker, William C., assignor.)			
48,475	Yale, Linus, jr	Shelburne Falls, Mass	Locks	June 27, 1865.
48,476	Yale, Linus, jr	Shelburne Falls, Mass	Screw taps, apparatus for reversing the motion of	June 27, 1865.
49,466	Yapp, William	Cleveland, Ohio	Eave-trough brackets	Aug. 15, 1865.
	Yates, Henry J. (*See* Faure, Cyprien, assignor.)			
48,288	Yates, John F	Mooresville, Ind	Wagon lock	June 13, 1865.
46,173	Yates, Joseph	Mott Haven, N. Y.	Low-water detectors	Jan. 31, 1865.
50,869	Yates, Joseph	Mott Haven, N. Y	Gun barrels, machine for rolling. (Antedated Oct. 25, 1865.)	Nov. 7, 1865.
46,417	Yates, Theodore	Milwaukee, Wis	Ordnance, breech-loading	Feb. 14, 1865.

List of patentees of inventions, designs, and reissues, 1865—Continued.

No.	Patentee.	Residence.	Invention or discovery.	Date.
50,983	Yellott, George	Baltimore county, Md	Engines, steam	Nov. 14, 1865.
50,650	Yeomans, Richard	Chicago, Ill	Printers' use, combination rack for	Oct. 24, 1865.
	Yendall, Samuel. (*See* Dorman, A. M., assignor.)			
	Yost, P. C., and T. J. Potts. (*See* Potts & Yost.)			
48,230	Youmans, Walter	Lansingburg, N. Y	Lubricating car wheels, mode of	June 13, 1865.
49,840	Young, Alonzo E., assignor to self and John W. Haines	Dorchester, Mass	Caster bottle holder	Sept. 5, 1865.
49,841	Young, Alonzo E., assignor to self and John W. Haines	Dorchester, Mass	Caster bottle holder	Sept. 5, 1865.
	Young, C., and R. Reynolds. (*See* Reynolds & Young.)			
	Young, C., and R. Reynolds. (*See* Reynolds & Young.)			
48,757	Young, Charles T	Lawrence, Mass	Cloth, felted, manufacture of	July 11, 1865.
51,253	Young, Daniel	Burlington, Ill	Broom	Nov. 28, 1865.
46,044	Young, Elijah	Tuscarora, N. Y	Separators, grain	Jan. 24, 1865.
50,411	Young, Henry, and Martin Stachelin	Port Chester, N. Y	Hinge	Oct. 10, 1865.
45,787	Young, Hiram	New York, N. Y	Pots, coffee. (Antedated December 11, 1861)	Jan. 3, 1865.
	Young, John. (*See* Fithian, Lemuel S., assignor.)			
51,773	Young, McClintock	Frederick, Md	Carriage-wheel hubs	Dec. 26, 1865.
49,050	Young, Solomon W., assignor to self and Charles T. Place	Providence, R. I	Steel, manufacture of	July 25, 1865.
	Young, Thomas J., *et al.* (*See* Davies, Robert H., assignor.)			
46,313	Young, William, assignor to self and Charles F. Stansbury	Washington, D. C	Galley, ship's	Feb. 7, 1865.
46,418	Young, William B	Chicago, Ill	Ploughs	Feb. 14, 1865.
48,758	Youngs, L. G	Wilmington, Ill	Cultivators	July 11, 1865.
48,231	Younkman, D. M	Fremont, Ohio	Stove, drum	June 13, 1865.
46,748	Zahn, Henry	New York, N. Y	Lamp shades	Mar. 7, 1865.
48,247	Zeh, Johann	Austria	Grates for steam and boiler furnaces	June 13, 1865.
48,863	Zeidler, Carl L	Cincinnati, Ohio	Mortising machines	July 18, 1865.
49,821	Zeigler, G. W	St. Louis, Mo	Chest and table	Sept. 5, 1865.
	Zeigler, John M., and Arad Duncan. (*See* Duncan & Zeigler.)			
49,356	Zerns, William, assignor to self, J. R. Deighn, and J. Snell	Pottsville, Pa	Wire-cloth, crimping	Aug. 8, 1865.
	Zilz, Jacob, and Herman Hock. (*See* Hock & Zilz.)			
51,275	Zimmerman, Charles P., assignor to self and Isaac P. Brown	Newark, N. J	Liquid cooler	Nov. 28, 1865.
47,675	Zimmerman, John	Royalton, N. Y	Cooking apparatus	May 9, 1865.
48,759	Zimmerman, William	Quincy, Ill	Mortising tool, revolving	July 11, 1865.
	Zitzman, E. H., *et al.* (*See* Christy, James, assignor.) Design.			
	Zoiner, Paul W., and Conrad Harris, (*See* Harris & Zoiner.) Design.			
	Zoiner, Paul W. and Conrad Harris. (*See* Harris & Zoiner.)			
50,412	Zopff, Heinrich A	Milwaukee, Wis	Coffee, apparatus for making	Oct. 10, 1865.
51,645	Zuchetti, Ferdinand	New York, N. Y	Sewing machines, cloth guide for	Dec. 19, 1865.
49,023	Zuckerman, Jacob	New York, N. Y	Sewing machine	July 25, 1865.

DESCRIPTIONS AND CLAIMS OF PATENTS

ISSUED IN THE YEAR 1865.

ILLUSTRATED WITH ENGRAVINGS.

No. 45,685.—E. H. Ashcroft, Lynn, Mass.—*Steam Pressure Gauge.*—January 3, 1865.—This invention consists in making the disks of steam pressure gauges by the process of spinning, instead of striking them up out of sheet brass as usual. The circular plate which is to constitute the spring is confined to a chuck, the face of which is wrought into a series of concentric elevations and depressions conformable to the undulations which it is desired to be given to the disk, and the chuck being caused to rotate, a tool is pressed against the disk, and carried backward and forward across it until it has assumed the shape of the face of the chuck. The disk is then removed from this chuck, and placed upon another with its other face exposed to the action of the tool.

Claim.—A corrugated disk spring, hardened or tempered, substantially as set forth.

No. 45,686.—Henry S. Babcock and S. H. Jenks, Ionia, Mich.—*Plaster and Seed Sower and Roller Combined.*—January 3, 1865.—In this machine the plaster box is open the whole length, the bottom being formed of an adjustable plate. A vibrating rod with teeth is caused to agitate the plaster in the box to prevent clogging. The seeding apparatus is of ordinary construction, and used in combination with a roller to smooth the ground.

Claim.—The plaster box fourteen having an unobstructed opening extending the whole length, the adjustable bottom plate thirteen, and toothed reciprocating bar twelve, in combination with the seed-sowing device and land roller, the several parts being constructed and arranged, substantially as and for the purpose set forth.

No. 45,687.—Ira Barber, jr., La Porte, Ind —*Cultivator.*—January 3, 1865.—In this invention the forward ends of the plough beams are fastened in a forked pivot, and the rear ends are suspended by chains, enabling the operator to give a lateral motion of his foot.

Claim.—First, the pivots *c*, pivoted with the pronged or forked ends, and arranged as shown in relation to the beam *c* and frame O′, in combination with the plough beams L, operating as and for the purposes herein shown and set forth.

Second, suspending the rear ends of the plough beams L by the chains *d*, in combination with the pivoted front end of said beams, for the purpose of enabling the operator to give the shovels the lateral motion, substantially as and for the purposes herein specified.

No. 45,688.—S. S. Bent, New York, N. Y.—*Combined Register and Summer Piece.*—January 3, 1865.—This invention consists in providing an ornamental summer piece with movable plates at the back, whereby it can be used as a register in winter, and a ventilator for summer.

Claim.—The combined register and summer piece for grate frames, constructed substantially as specified.

No. 45,689.—S. E. Blake, Worcester, Mass.—*Bread and Vegetable Slicer.*—January 3, 1865.—This invention is explained by the claim and engravings.

Claim.—The combination of the eccentric slicer G, adjustable feed box, feed block N, and rack O, when constructed and operated substantially as and for the purposes described.

Also, the combination of the adjustable cam P, with lever Q, pawl R, rack O, and springs *h* S, for the purpose of adjusting the length of the feed, substantially in the manner herein described.

Also, the combination of the lever Q, pawl R, rack O, and rod U, for the purpose of disengaging the pawl from the ratchet, substantially as herein described.

Also, in combination with the revolving eccentric slicer G, feed box and feed, the protecting shield K, substantially as and for the purposes described.

Also, the combination of the revolving slicer, adjustable feed box, and adjustable feed, when the several devices are constructed and arranged substantially as and for the purposes described.

No. 45,690.—T. S Blake and O. E. Mosher, New York, N. Y.—*Refrigerator.*—January 3, 1865; antedated February 12, 1864.—A rectangular box provided with double walls having any suitable non-conducting substance between, contains in its upper part an inclined rack for holding ice, beneath which is a trough for carrying off water coming from the ice. The air entering the refrigerator from the outside first passes over the trough, the water in which being colder than the air, reduces its temperature somewhat before it comes in contact with the ice in the rack. Thus the waste water is made available as a cooling medium.

Claim.—The arrangement of the air chamber *d*, rack *c*, and conducting plate D′, with the bottom D, water trough and plate E, and box A, all in the manner herein shown and described.

No. 45,691.—C. F. Blakeslee, New York, N. Y.—*Arms for Dolls.*—January 3, 1865.—The arms are made by cutting them from a single piece of leather, so that they may be folded upon themselves and glued without the necessity of stuffing the fingers or stitching the edges as heretofore.

Claim.—As an improved article of manufacture an arm for dolls constructed by stamping or cutting out of leather of suitable thickness, with the fingers and adjacent part of the hand completely cemented together so as to have the necessary form and rigidity without stuffing, all as herein described.

No. 45,692.—H. F. Bond, Waltham, Mass.—*Device for Trimming Lamp Wicks.*—January 3, 1865.—This device consists in the combination of two lever handles connected together by a rivet, to one of which is attached a frame carrying a cutter knife operating against a head plate and returned by two spiral springs, and the other having a cross bar, which by compression of the handles operates the said frame and knife.

Claim.—The lamp-trimming device, constructed and operated as herein set forth.

No. 45,693.—A. H. Brainard, Dorchester, Mass —*Vice.*—January 3, 1865.—This invention relates to the bed-plate, to which is attached the stationary jaw, and it consists in forming grooves both upon the sides and in the bottom, that in the latter being T-shaped and forming a hold or support for the head of the bolt, which secures the vice in position and on which it traverses, the ones on the sides forming guides and supports for the tongues of the movable jaw.

Claim.—Constructing the bed-plate of the stationary jaw with grooves both upon the outside and inside, the outer grooves receiving the tongues of the movable jaw, which is thus guided and supported, the inner groove receiving and affording a firm hold for a bolt, which secures the vice in position and also allows it to revolve upon a changeable centre or to slide to and fro, substantially as described.

Also, the nut *g*, substantially as described.

No. 45,694.—John Broughton, New York, N. Y.—*Lubricator.*—January 3, 1865.—The object of this invention is to so combine and arrange parts that an independent detachable reservoir of glass or other transparent material may be used without danger of fracture from expansion or contraction, and thus to combine the advantages of a transparent lubricator or cup, with a graduating feed. Its novelty consists in the combination and arrangement of a cap and spindle with a detachable reservoir, so that the shank and spindle, with the cap, may be firmly held together independently of the reservoir, and allow it to expand and contract independently of the connection between the shank and cap.

Claim.—First, the arrangement of the shank and spindle B*j*, and cap C, in combination with a detachable reservoir, substantially as described.

Second, combining and arranging the detachable reservoir, the shank and spindle B*j*, and cap C, in such a manner that the said shank and cap are held firmly and rigidly together independently of the reservoir, said reservoir being free to contract and expand independently of the connection between the shank and cap, substantially as described.

No. 45,695.—Israel F. Brown, New London, Conn.—*Roller for Cotton Gins.*—January 3, 1865.—In roller gins, when a bunch or wad of cotton tangled or matted presents itself to be drawn through between the roller and breast plate, the wad causes the latter to be forced away from the roller in order to open a passage for itself, thereby permanently bending the plate and subjecting it to injury from the stripper. The object of this invention is to prevent this.

Claim.—First, making the drawing-in or working roller of a roller cotton gin with a surface partly solid and partly elastic, substantially as described.

Second, putting elastic bands or rings around the roller of a roller gin in parallel and in continuous or in interrupted lines, substantially as described.

No. 45,696.—Andrew Buchanan, Brooklyn, N. Y.—*Car Spring.*—January 3, 1865.—This invention consists of a spring composed of two arms, each of which is supported at two or more points by blocks of India-rubber or by springs of any other suitable material, in such a manner that the said blocks or springs form a yielding fulcrum for the arms, and also in the application of toggle arms connecting the ends of the arms which are supported by the springs, and the spring to be adjusted by a screw.

Claim.—First, a spring for cars or other vehicles composed of two arms, each of which is supported at two or more points by blocks of India-rubber or other equivalent material, substantially in the manner and for the purpose herein shown and described.

Second, the set screw *f*, in combination with the block *a* or its equivalent, and with the arms A A, constructed and operating in the manner and for the purpose substantially as set forth.

Third, the toggle arms C C applied in combination with the arms A A, and springs *a b b*, in the manner and for the purpose substantially as specified.

No. 45,697.—JACOB BUSSER, Philadelphia, Penn.—*Propeller.*—January 3, 1865.—A strong framework of iron or other suitable material is constructed so as to be easily let into a bed made to receive it, said bed being attached to and projecting from the sides of the vessel, all the working or propelling parts, when in place, being under water. The said frame moves backward and forward in guides, the paddles being raised and lowered by the action of the water upon them in the backward and forward motion.

Claim.—The arrangement of the guides, frame, paddles, stays, and levers, the whole being arranged to operate as herein set forth and for the purposes herein specified.

No. 45,698.—HERMAN CAMP, San Francisco, Cal.—*Quartz Crusher.*—January 3, 1865; antedated September 17, 1864.—Within a cylinder of any desired dimensions and of any suitable material is placed a roller or crusher, or a series of dies composing such roller or crusher when bolted together, said roller being provided with interstices for the purpose of transmitting the substance to be crushed from its back to its front, while in motion. The cylinder is lined on the inside with a series of chilled-iron staves, and runs upon friction rollers.

Claim.—The combination of the cylinder A and its peculiarly constructed head piece B, with the dies constructed of a series of sections of cast iron as shown in figures 3, 4, and 5, supported and revolving upon friction wheels, the whole made, constructed, and operating in the manner and for the purpose herein described.

No. 45,699.—LEWIS R. CARPENTER, Lancaster, Ohio.—*Carriage Brake.*—January 3, 1865; antedated August 19, 1862.—A horizontal lever provided with a roller is attached to the carriage; said roller traverses a bar, which when the carriage begins to descend a hill is inclined so that the roller runs down it and automatically operates the devices which apply the brake. When the carriage passes upon a level or commences to ascend a hill, the roller runs back on the bar and releases the brake.

Claim.—Arranging the lever R horizontally, and making the weight upon it roll or traverse on a bar, substantially as described for the purpose specified.

Also, in combination with the lever R, and weight or roller S, the link W, lever N, and shaft L, and roller X, substantially as described.

No. 45,700.—A. B. CASS, Chicago, Ill.—*Cultivator.*—January 3, 1865.—This invention consists of a seat arranged upon one end of a lever and furnished with rollers to facilitate its movements. The lever extends over the draught pole, and is connected to it at its front end by a rod passing through a lip. Just in front of the seat is a cross-bar with a series of holes, through which pass rods fastened firmly to the plough standards. The ploughs may be thus gauged to run at any desired distance from each other, and by a motion of the seat, be moved laterally to conform to irregularities on the rows. At the forward end of the seat lever is a horizontal bar, along which runs an iron rod, furnished at its centre with a vertical bow, and at its ends with small bars or levers connected with scrapers, running in front of the wheels.

Claim.—First, the combination of the adjustable lever A, bar *a*, levers *b*, and ploughs M, arranged and operating substantially as and for the purposes set forth and shown.

Second, attaching the scrapers J to the axle, by one or more arms K, substantially as and for the purposes shown and set forth.

Third, the combination of the adjustable lever A with the rod L, provided with the arms *l* or their equivalent, and the chains *h* operating as and for the purposes shown and specified.

Fourth, the employment of one or more rollers H to facilitate the lateral motion of the lever A, operating substantially as shown and described.

Fifth, the employment of the roller I in combination with the lever A, arranged and operating substantially as and for the purposes herein shown and specified.

No. 45,701.—FRANCIS CLARK, Auburn, Mass.—*Breech-loading Fire-arm.*—January 3, 1865.—This invention consists in the application to a breech-loading fire-arm of a spring cartridge retractor, provided with a hook or catch for engaging with a pin on the hammer, so as to be operated by the same on cocking the arm, and having a projecting rod or arm extending forward so as to be also operated by hand if desired.

Claim.—First, the combination of the hammer G, cartridge extractor *b*, hook *m*, and retaining spring *h*, substantially in the manner and for the purposes herein described.

Second, the combination of the cartridge extractor as herein described with the extended arm *g*, so that it can be operated either from the front by means of said arm, or from the rear by means of the hammer, substantially as herein described.

Third, the application to the hammer of the regulating screw 3, in combination with the cartridge extractor, substantially as and for the purposes described.

No. 45,702.—G. H. CLEMENS, U. S. A.—*Saw-mills.*—January 3, 1865.—This invention consists in providing on the head block a hinged knee, which turns down out of the way when a log is rolled upon the head block, so that a log can be rolled on from either side. The carriage is supported upon pedestals so arranged that the wheels under them can be adjusted to an angle with the carriage track, so that the carriage shall run steady and not tend to spring the log in the operation of sawing.

Claim.—First, the hinged knee adapted to be turned down out of the way, in the manner and for the purposes herein specified.

Second, the provision of supporting wheels or rollers F, set or capable of being set obliquely to the track, substantially as and for the objects set forth.

Third, the wheels F journalled in pedestals G, susceptible of angular adjustments beneath the carriage, as represented.

No. 45,703.—M. C. DAVIS, Guilford, Ohio.—*Machine for Shearing Sheep.*—January 3, 1865.—This invention consists in forming a bar in four sections, each section being connected together by swivel joints in connection with a smaller bar to which the shears are connected, and provided with pulleys and cords whereby the shears are operated at right angles by the same.

Claim.—First, two bars J J′ formed each of two parts *g g′*, connected together by swivel joints *h h*, and the bars connected by a joint I, which admits of them working in a direction at right angles with each other, in combination with the bar K to which the shears are attached, said bar being connected to the bar J′ by joint M, similar to I, and all arranged substantially as and for the purpose specified.

Second, the shears composed of the fixed cutters *o o*, and the vibrating knife Q attached to the outer or front end of bar K, the knife being operated from the shaft B through the medium of the pulleys F H N, cords or bolts G O, crank *p*, connecting rod R, and arm *q*, all arranged substantially as set forth.

No. 45,704.—JAMES B. EADS, St. Louis, Mo.—*Mounting and Operating Ordnance.*—January 3, 1865.—The gun is mounted on a carriage or frame capable of being raised by steam or other power, and the improvement consists in the arrangement and connection of side steam-cylinders, whose piston rods operate, by means of toothed racks, upon toothed segment gears, with their rock shafts and arms, for the purpose mentioned. The invention also consists in the employment of an adjustable hand-capstan, having a worm gear upon its shaft, and capable of being thrown into and out of gear with the said elevating devices, so that the guns may be worked by manual power if desired.

Claim.—First, the employment of the cylinders E E, in combination with the racks *f f f′ f′*, gears *g g g′ g′*, and arms *h′ h′ h″ h″*, or their substantial equivalents in effect, all being constructed and arranged to operate substantially as and for the purpose herein set forth.

Second, in combination with the other operative mechanical devic r operating the frame H, the adjustable capstan R, substantially as and for the purpose forth.

No. 45,705.—WILLIAM FENSTERMACHER, Shippensburg, Penn.—*Clod Crusher.*—January 3, 1865; antedated March 7, 1864.—A wooden cylinder of suitable size is provided with metallic blades running lengthwise of it. The cylinder being drawn over the surface of a harrowed field, either before or after sowing or planting, the blades crush and open the clods and dry lumps of the soil. A smoothing roller follows, which rolls and smooths down the soil thus broken up.

Claim.—The combination with the main frame A and arms or hangers C C and C′ C′ of the cylinder E, provided with blades G, and the rear smooth roller D, said parts being arranged and operating in relation to each other as and for the purposes set forth.

No. 45,706.—ELISHA FITZGERALD, New York, N. Y.—*Apparatus for Aerating Dough.*—January 3, 1865.—This invention consists in giving the dough an additional charge of carbonic acid after it has been mixed. The gas for supercharging is contained in a receiver, and by means of a pipe meets the dough in the passage as it is discharged from the mixer.

Claim.—First, supercharging the dough, already aerated in the mixing receiver, by forcing air or gas into it in the passage K, at the time the faucet is opened to permit the exit of the dough.

Second, forcing a jet of air or gas into the passage K at the time the dough is being expelled from the mixing receiver.

Third, admitting the air or gas under pressure to come in contact and be infused in the dough in its passage out.

No. 45,707.—JOHN M. FOLLETT, Atkinson, Ill.—*Seeding Machine.*—January 3, 1865; antedated May 14, 1862.—This machine consists of a combination of colters for cutting stubble, of ploughs for opening and properly preparing the earth for the seed, and of a seeder for sowing seeds of various kinds; the seed-stopper, slides, and ploughs being so connected that the distribution of the seed may be stopped and the ploughs elevated simultaneously by a simple manipulation of the driver.

Claim.—The combination of the stopper slides F, bar G, and plough and colter frame, composed of the parallel bars I, with the bars *l m* attached, the slides F and plough and colter frame being connected to the bar G′, and all arranged as shown, to operate as set forth.

No. 45,708.—JOHN W. FOSTER, Washington, D. C.—*Cancelling Stamp.*—January 3, 1865.—This invention consists of an adjustable gauge-punch, and annular cutter, made also adjustable, and a peculiar arrangement of set screws, by which the letters on the face of the stamp can be easily changed.

Claim.—First, a cancelling stamp, provided with an annular cutter C, and an internal gauge B, either one or both adjustable in relation to each other, substantially as and for the purposes set forth.

Second, the combination of the double set screws E F with the cutter C and gauge B, for the purpose specified.

No. 45,709.—T. E. GORDON, Brooklyn, Ohio.—*Crutch.*—January 3, 1865.—This invention consists in a method of adjusting a movable point in the bottom of the crutch, which can be raised up or pressed down by the cross-piece, and held firmly in either position by turning up or down respectively; the side crutches hinged to each side of the cross-piece. The India-rubber spring aids in keeping the catches in position.

Claim.—The finger *g*, stops *g′*, and springs *n*, in combination with the tube *h* and crutch, when arranged and operating conjointly, as herein set forth.

No. 45,710.—HENRY C. GRIGGS, Waterbury, Conn.—*Picture Medals, Buttons, &c.*—January 3, 1865.—This device is composed of two disks or pieces of metal, enclosing a perforated ring, made to hold the pictures back to back. A loop pressed in the edge of one of the disks serves to support the frame.

Claim.—The countersunk or perforated ring *b*, in combination with the shell *a*, for securing the picture in the manner specified.

Also, a loop upon the edge of the shell, formed substantially as specified.

No. 45,711.—G. E. HARDING, Bath, Maine.—*Press.*—January 3, 1865.—This invention relates to a press in which two toggle levers are connected to a strap hinged to the frame and to the follower, and operated by a windlass. The rope from the windlass extends over pulleys in the outer or loose ends of the toggle levers, and along the upper edges of said levers through loops or under sheaves near their fulcra, up over sheaves fixed to the frame, and down to straps secured to the rod which forms the movable fulcrum of said toggle levers, in such a manner that a strain on the rope has a tendency to raise the follower and the inner ends of the toggle arms, and at the same time to draw their loose ends together, and the follower is exposed to a powerful upward pressure.

Claim.—The toggle levers F, having their fulcra on pivots projecting from the ends of the follower, and applied in combination with straps G, and with a rope or chain extending from a windlass over pulleys in the loose ends of said levers, and through loops or pulleys attached to said levers near their fulcra, thence over pulleys fixed to the frame, and down to the fulcrum pins of the levers, substantially in the manner and for the purpose set forth.

Also, the straps G, hinged at one of their ends to the frame A, and at their opposite ends to the loose ends of the levers F, in combination with said levers and with the follower and windlass, constructed and operating substantially as and for the purpose described.

No. 45,712.—DANIEL C. HELLER, Reading, Penn.—*Shutter Bolt.*—January 3, 1865.—This invention is designed as an improvement on a bolt patented to the said Heller July 5, 1864, and consists in forming the circular inclines on the case of the bolt, instead of on the button, as in this instance referred to; otherwise the construction and operation of the two are substantially the same.

Claim.—The revolving button C or C′, bearing against inclined planes *d* or *d′*, cast on the case of the bolt, or on a bridge placed over the same, and having its shank or pivot rivetted in a sleeve D or D′, through which the bolt B or B′ passes, all arranged substantially as and for the purpose herein set forth.

No. 45,713.—D. H. HISE, Salem, Ohio.—*Railway Coupling.*—January 3, 1865.—The object of this invention is to obtain a coupling for railway rails which will hold the ends of the same in line with each other, so as to avoid the injury now occasioned by the hammering of the car wheels against the projecting ends of the rail, by which the rails are soon injured, and their removal for repair rendered necessary long before any other portion thereof is materially worn.

Claim.—The two bars B B′, one, B, provided with the key bolts C C, and the other provided with holes, through which and holes in the rails the key bolts or tangs pass, in connection with the keys D D, all arranged substantially as and for the purpose specified.

No. 45,714.—HENRY HISE, Ottawa, Ill.—*Snap-hook.*—January 3, 1865.—This invention relates to a snap-hook of that class which are provided with a snap and spring to close the

hook and prevent it from becoming casually detached from the article with which it is engaged, and at the same time admit of the article being readily engaged with, or fitted into, the hook, and disengaged from it when required.

Claim.—A new article of manufacture, the snap-hook, constructed and operating in the particular manner herein specified.

No. 45,715.—ERASTUS HOLT, Wheaton, Ill.—*Self-loading Hay Cart.*—January 3, 1865.—Two arms, one on each side, are pivoted to the lower part of the front end of the body, to which the rake-head or bar is attached by pivots. Above the rake-head a shaft is pivoted to arms firmly secured to the upper part of the sides of the body, which shaft is connected with the rake-head by chains and is rotated by a lever, thereby raising or lowering the rake. To the front ends of the upper arms is pivoted another bar, to which the draught pole is attached, and to the end of said draught pole a curved arm is attached, extending backward toward the body. A bar loosely clasping the rotating shaft is attached to the curved arm by a pin passing through holes in its upper end, thereby furnishing means for tilting the body.

Claim.—The rake N, having its bar O, provided between arms P P, which are attached by pivots to the sides of the body A of the cart, in combination with the shaft F, cords or chains *h h*, lever K, and the arm I, or its equivalent, all arranged substantially as and for the purpose herein set forth.

Also, the bar G pivoted between the arms E E at the sides of the front end of the cart body, in combination with the arm I at the rear of the draught pole H, and the bar J attached to shaft F, all being arranged to operate in the manner substantially as and for the purpose specified.

No. 45,716.—M. R. HOWELL, Elizabeth, N. J.—*Moulder's Sprue.*—January 3, 1865.—The claim in this case sets forth the nature of the invention.

Claim.—A moulding sprue constructed with concave sides and curved ends, as a new article of manufacture.

No. 45,717.—J. T. P. HUNT, Manchester, N. H.—*Street Gas Lamp Posts.*—January 3, 1865.—This invention consists in constructing a lamp post with an enlargement for the location of a gas meter, with proper door and fastenings, as a new article of manufacture.

Claim.—Constructing a lamp post with an enlargement for the location of a gas meter, with a door and fastening, as described, as a new article of manufacture.

No. 45,718.—E. D. HURST, Lancaster, Penn.—*Thread Guide for Spinning Machine.*—January 3, 1865.—The claim and engraving fully sets forth the nature of this invention.

Claim.—The use of a glass cylinder introduced into the eye of metallic guides through a perforation made for that purpose, in the manner specified.

No. 45,719.—HENRY C. HUTCHINSON, Cayuga, N. Y.—*Lamp.*—January 3, 1865; antedated September 12, 1863.—In a circular or oval wick-tube are arranged chambers for the bearings of a shaft carrying a ratchet for raising and lowering the wick.

Claim.—The combination of the ratchet A or the shaft F with the circular or curved wick-tube B and basin or chamber C, as and for the purpose substantially as described.

No. 45,720.—WALTER INGALLS, Sanborton, N. H.—*Method of Coupling Boats.*—January 3, 1865; antedated September 12, 1863.—In the stern of a boat is constructed a coupling arrangement, while its bow is built so that when attached to the stern of another boat a continuous hull, as it were, is preserved through both boats, or as many as may be in the train, so that the channel made by the first boat may be preserved throughout the entire train, and all the boats are more easily moved in the water than they could be if separated.

Claim.—The connecting or coupling of boats for navigation on rivers or canals into continuous lines or trains, by the means or mode substantially as herein described and set forth.

No. 45,721.—HIRAM JORDAN, Milford, Ohio.—*Corn Planter.*—January 3, 1865.—On the front beam of this plough is a spring, to which is attached a cord extending back and attached to an arm which is secured to a crescent-shaped seed cylinder. From this arm the cord extends to near the handles, where there is a jointed lever to which the cord is fastened. The seed cylinder is filled with seed, and by means of the lever and cord the cylinder is turned and its contents deposited at pleasure, and the springs cause the cylinder to return to its original position.

Claim.—The arrangement of conveying hopper A, crescent-shaped dropper B, lever C, rod D, spring E, shave F G, and roller H, the whole being combined and operating together in the manner specified

No. 45,722.—E. B. JUCKET, Pawtucket, R. I.—*Pump.*—January 3, 1865.—A cylinder is formed with an induction and an eduction port on opposite sides, a ledge being formed around the interior beneath the lower line of these ports. A cylinder of much smaller diameter, and shorter, is formed with a surrounding disk near its top and another near its bottom. When

placed within the larger cylinder these disks fit into it, the lower one resting upon the interior ledge. The ports are thus between the disks, and vertical partitions transverse to the ports, serve to divide the water space equally. Valves are so arranged upon the disks that a piston moving in the smaller cylinder keeps up a continuous flow of water. Thus the operative parts of the pump may be readily removed for repairs and returned in perfect order.

Claim.—The combination of the cylinder and valve plates, constructed independent of the outer can, substantially as and for the purpose specified.

No. 45,723.—JOHN W. KINGMAN, North Bridgewater, Mass.—*Roofing.*—January 3, 1865.—This invention consists in covering the joints in a roof with a strip of metal, so formed as to make a yielding connection, so that the expansion or contraction of adjacent surfaces will not cause the joint to be exposed. This metal strip is nailed over the joint, and a strip of cloth is then cemented upon it.

Claim.—The spring plate *c d*, fastened as described and covered with cloth, cemented or pasted thereon, substantially as specified.

No. 45,724.—Z. P. LEACH, Danbury, Conn.—*Lifting Dock.*—January 3, 1865.—This invention consists: 1st. In the use of a series of toggle levers connected to each other, and to a rising and falling beam which supports the cradle in such manner that by exerting a strain upon a strap, rod or chain connecting the toggle levers, a powerful upward strain is produced on the beams supporting the cradle, and a vessel lying thereon can be lifted up and sustained above the surface of the water.

2d. In the application of supplementary beams provided with legs that may be turned in or out, and with dogs catching in suitable teeth in such a manner that when the cradle is attached to said beams and raised to a certain height, said beams, together with all the weight supported thereon, can be sustained by the dogs, and the main beams can be lowered to allow of turning in the legs and taking a fresh hold, in cases where the nicking capacity of the toggle levers is not sufficient to raise the vessel high enough out of the water.

Claim.—First, the toggle levers D, connected to each other by straps E or their equivalents, and operating in combination with the rising and falling beams C, substantially as and for the purpose herein set forth.

Second, the supplementary beams C′, prinded with legs *b*, and applied in combination with the main beams C, and toggle levers D, in the manner and for the purpose substantially as described.

No. 45,725.—HIRAM LEMIN, Leonidas, Mich.—*Stump Extractor.*—January 3, 1865.—This invention is designed as an improvement upon a machine for extracting stumps for which a patent was granted to the present inventor, bearing date December 15, 1863. The invention consists in the application to the machine of a lever and springs or elastic bars, arranged in such a manner with pawls and ratchet, that the same means which are employed to extract a stump may be also used for gradually lowering it. In connection with the ratchet is a brake arranged in such a manner that an elevated body may, by a simple application of power, be held in suspension until it is necessary or convenient to remove it.

Claim.—The combination of the parts involved in freeing the ratchet wheel, to wit, the lever bar P O, bars N, pawls K, and segment wheel Q, with the lowering brake levers U S, and shoe T, substantially as described and represented.

No. 45,726.—MILES K. LEWIS and JOHN C. DURBIN, Iowa City, Iowa.—*Hay Loader.*—January 3, 1865.—This invention relates to the construction, arrangement and combination of the several parts designated by the claim, from which and the engraving it will be readily understood.

Claim.—The combination of the transverse rod *j*, lever *k*, shaft *d*, pulleys *c c*, cords *e e*, cross-bar *g*, with the rake, for the purpose of raising the rake with the gearing *a b*, when the vehicle is backed to which the machine is connected.

Also, the arrangement of the elevating belt of slats in connection with the rotating arms P P, for joint operation, as and for the purpose described.

No. 45,727.—H. S. LIPMAN, Philadelphia, Penn.—*Eyeletting Machine* —January 3, 1865.—The punching and eyeletting operations are performed by the alternate right and left movement of the lever, and the novelty consists in the combination with such a machine of a punching die which makes a conical incision in the fabric with or without a central excised part.

Claim.—In combination with an eyelet machine, a die which makes a conical incision in the fabric for the reception of the eyelet with or without a central incision of a part, bearing the whole or a portion of the material to be embraced by the flange of the eyelet, substantially as shown and described.

No. 45,728.—HENRY MAYCOCK, Verona, N. Y.—*Cattle Stanchions.*—January 3, 1865.—Every alternate standard is pivoted at the lower end, the upper ends being connected by means of a rod. This rod is operated by means of a cord pulley and lever, so that by a single movement of the lever all the movable stanchions are adjusted.

Claim.—The arrangement and the combination of the lever J, rope K, operating on pulleys P, and the sliding rail L, when arranged and combined as herein described, for the purpose of operating the stanchions behind the cattle.

No. 45,729.—S. T. McDougall, New York, N. Y.—*Apparatus for Carburetting Gases.*—January 3, 1865.—This invention consists of a vessel provided in the top with an aperture for the admission of a reservoir provided with a valve. The vessel is divided into two compartments by partitions, the said compartments communicating with each other by means of an aperture in the partition. One of the vessels is provided with one or more partitions secured alternately at the top and bottom of the chamber, arranged in such a manner that the last one shall always be secured at the bottom. The said partitions are provided with perforations which are below the surface of the hydro-carbon liquid when the vessel is in operation. In the spaces between the partitions are suspended sections of fibrous materials, so that their lower ends shall be immersed in the hydro-carbon liquid.

Claim.—First, the combination of a liquid or reservoir chamber B, a reservoir C, and a carburetting chamber D, for the purpose herein specified.

Second, the vessel A, composed of a chamber B and a chamber D, constructed and arranged substantially as and for the purposes herein set forth.

Third, the construction and arrangement of the chamber D, as provided with alternating close partitions or divisions 2 and 3, and intermediate fibrous or capillary divisions *h i j*, substantially as and for the purposes herein specified.

No. 45,730.—Daniel McNab, Moscow, Michigan.—*Cultivator.*—January 3, 1865.—This invention consists in constructing a cultivator or drill tooth with an upper curved portion, which has a bearing against some fixed part of the machine. The form of this curved portion and the position of the tooth determines the amount of resistance which it may overcome without being raised from the ground.

Claim.—Constructing a cultivator or drill tooth with an upper curved portion, which curved part shall have a bearing against some rigid portion of the machine when it is in motion, so that the form of such curved portion of the tooth, and the position of the tooth, shall determine the amount of resistance which it may overcome without its being raised from the ground.

No. 45,731.—B. E. Mead, Peekskill, N. Y.—*Game.*—January 3, 1865.—The game consists of an imitation fort with a flagstaff. A number of holes serve to introduce balls, while a greater number of portholes serve to receive them, each being numbered in a special manner.

Claim.—First, the construction of the holes *x x* in the walls *a b c d*, in the manner and for the purpose substantially as set forth.

Second the making of marks, figures, or indentations in the bottom of a box, in combination with figured holes in its sides for indicating the position of a marble at rest after being driven from one of the holes, in the manner and for the purpose substantially as set forth.

Third, the use of a flagstaff, in combination with the holes in the sides of the box, in the manner and for the purpose substantially as set forth.

No. 45,732.—David H. Metcalf and H. J. Shoemaker, Battle Creek, Mich.—*Stove-pipe.*—January 3, 1865.—This invention consists of a stove-pipe with a smaller pipe arranged inside, in which is fitted a circular damper. The annular space between the two pipes has two balanced dampers, so fitted that when open they are supported by the two pipes.

Claim.—First, adapting balanced dampers *b b* to operate partially, when arranged at any desired point within the space formed by the two pipes A B, substantially as desired.

Second, so constructing and arranging the dampers *b b* within a space formed by the two pipes A B, that when these dampers are fully open they will be supported in this condition by the two pipes A B, substantially as described.

No. 45,733.—Loring Moody, Malden, Mass.—*Car Coupling.*—January 3, 1865.—This invention consists of a car coupling, composed of a tripping lever, a curved pin, and a recessed bunter bar, arranged to operate automatically as the cars come in contact with each other.

Claim.—The combination of the separate curved pin C with the tripping lever B and the recessed bunter bar A.

Also, the combination of the separate curved pin C and its holding mechanism, viz.: the spring D and notch *f*, or their mechanical equivalent or equivalents, with the tripping lever B and the recessed bunter bar A, the whole being substantially as described.

Also, the combination of the slot *h*, or its mechanical equivalent, with the tripping lever, its curved pin, and the recessed bunter bar, the said slot being arranged in manner and for the purpose set forth.

No. 45,734.—Jacob Morgan, Dundee, Ohio.—*Mode of Constructing Frames for Portable Houses.*—January 3, 1865.—This invention consists in a peculiar arrangement of braces,

posts, sills, &c., of a frame, whereby the same may be easily taken apart for transportation, and yet possess sufficient rigidity and strength when put up to answer its ends.

Claim.—A portable saw-mill frame, constructed and arranged with braces and tightening rods, substantially as herein specified.

No. 45,735.—E. H. MORTON, Oxford, Iowa.—*Ditching and Mole Plough.*—January 3, 1865.—This invention consists in a mode of attaching the sweep to the capstan, whereby the former is rendered capable of being adjusted, so as to be readily connected with, and disconnected from, the capstan, and admit of the latter being turned when the plough beam is drawn forward without turning the sweep, and without removing it from the machine. The colter is attached to the beam in such a manner that the former may be made to work at different angles relatively with the latter, as may be desired, and the colter and mole readily drawn out of the earth.

Claim.—First, attaching the sweep E to the capstan B, by means of the journal *c* and slotted bar D, on the latter, and the eye *d* on the sweep, substantially as and for the purpose set forth.

Second, in combination with the sweep E, the adjustable bail support G, constructed and applied to the capstan frame A, to operate as and for the purpose described.

Third, the securing of the colter K to the beam H through the medium of the slot *a* and adjustable plates J J′, arranged substantially as herein set forth.

No. 45,736.—JOSEPH MUIR, New York, N. Y.—*Machine for Condensing Pap, or Slops of Clay, for Potter's use.*—January 3, 1865.—This invention consists of a whirling vessel having impermeable sides, with an inclined rim at the top, and attached to a rotating disk, combined with mechanism for rotating it, and a draw-off pipe.

Claim.—First, the whirling vessel having imperforated sides impermeable to water and inclining inward, or with a rim at the top, and combined with mechanism for rotating it, substantially as described, and substantially for the purpose hereinbefore set forth, and with the draw-off pipe *h*, or its equivalent, in combination with the whirling chamber.

Second, securing the whirling vessel to the rotating mechanism by means of a disk or platform *e* and the screw bolts *g* and *g′*, or their equivalents, for the purpose of conveniently attaching or removing the whirling vessel.

No. 45,737.—JOSEPH MUIR, New York, N. Y.—*Process of Preparing Clay for Potters' use.*—January 3, 1865.—This invention consists in separating the slops of clay from the water by the action of centrifugal force upon the slops, when contained in a whirling vessel, having impermeable sides, an inclined rim at the top, and a draw-off pipe.

Claim.—As my improvement, in the process of preparing clays for potter's use, or for the market, the above-described improved mode of condensing the pap or slops of clay by subjecting the slops in proper quantities to the action of centrifugal force in a whirling vessel having imperforated and impermeable sides, substantially as described, whereby the clay, by reason of its adhesiveness and greater specific gravity, is condensed and separated from the water to the desired extent without recourse to straining, by which a portion of the clay is lost and adheres to the sides of the vessel from which it may be removed in a plastic state for potters' use, or to be prepared in the usual manner for the market as potter's clay.

No. 45,738.—WILLIAM NASH, Watertown, N. Y.—*Hand Punches.*—January 3, 1865.—This invention consists in applying a movable gauge to the lower limb of the punch, so as to be able to punch holes in a line with each other and with the edge of the material operated upon; and also in operating the cutting arm of the punch by means of a free lever, instead of making it part of one of the handles, according to the usual construction.

Claim.—First, a hand punch for cutting leather, paper, metals, and other materials, wherein the punch lever is independent of the movable arm of the handle of the punch, but is operated by the toe thereof, as by a free lever not connected with the punch lever by any joint or hinge, substantially as above described.

Second, the combination with a hand punch of any adjustable gauge *i*, substantially as and for the purpose above set forth.

No. 45,739.—JOHN E. NEILL, Brooklyn, N. Y.—*Steam Boiler.*—January 3, 1865.—This invention consists in superheating steam in the boiler in which it is generated. It is claimed as applicable to a Martin boiler, and the device consists of a number of tube boxes of the above-named boiler for the purpose of superheating steam, which is accomplished by removing a portion of the tubes of each and supplying their places with nests of tubes, arranged in such a manner that the steam from the steam-spaces of the boiler in its passage to the engine passes through them and is superheated.

Claim.—Incasing a portion of the tubes of a tubular steam boiler substantially as herein described, so that such casing shall extend on one side to the steam chamber of the boiler to receive steam generated in the boiler and conduct it to the tubes so incased, to be thereby superheated, and on the other side communicate with the outside of the boiler to carry off the steam after it has been superheated substantially as described.

Also, combining with superheating tubes, or the equivalent thereof, a water tube or tubes, or the equivalent thereof, for the protection of the tubes or flues of a superheater against the intense heat of the products of combustion, by causing such products to act first on the surfaces protected by water, substantially as herein described.

No. 45,740.—HARRISON OGBORN, Richmond, Ind.—*Grain Screen.*—January 3, 1865.—This invention relates to the combination of a riddle and screen suspended upon adjustable straps and having a very rapid motion communicated by means of a cam wheel and lever. The riddle is adjusted in the opposite direction to the screen.

Claim.—The cam wheel J and lever K, in combination with the riddle G, screen I, and adjusting straps E, the several parts being constructed, arranged, and operating substantially as and for the purposes set forth.

No. 45,741.—A. M. OLDS, Chicago, Ill.—*Lumber Measure.*—January 3, 1865.—The object of this invention is to obtain an instrument by which the number of superficial feet contained in boards of different lengths can be estimated. Within a suitable case is placed a disk in a vertical position, which by being made to pass over the surface of the boards indicates on a dial their superficial contents. Connected to the shaft of the disk is a sliding shaft, carrying on its end an endless screw or equivalent device through which the motion of the shaft of the measuring disk is transmitted to the arbor, carrying the index heads in such a manner that by simply adjusting the sliding shaft the instrument can be set for boards of different lengths. A sleeve projecting from the bottom of this case and terminating under the centre of the disk enables the operator to commence measuring with the edge of the board directly under the centre of the disk.

Claim.—First, a lumber measure arranged substantially as described, so that with a measuring disk of uniform diameter the superficial feet of boards of different lengths can be determined.

Second, the nest of wheels *f f' f,''* &c., applied in combination with the disk A, sliding shaft *h*, and index hands *c d*, substantially as and for the purpose set forth.

Third, the shoe *p*, in combination with the measuring disk A, constructed and operating substantially as and for the purpose described.

No. 45,742.—JOHN PEACE, Camden, N. J.—*Cutter Stock.*—January 3, 1865.—This invention consists in the construction and arrangement of certain devices which require a reference to the drawings to be understood.

Claim.—As a new article of manufacture, a cutter stock constructed as herein shown and described.

No. 45,743.—JOHN G. PERRY, South Kingston, R. I.—*Sausage Filler.*—January 3, 1865.—This invention consists in the combination of a cylinder with a sloping bottom, and a rack and piston head geared so as to fit the sloping bottom of the cylinder, in order that all the meat may be forced into the nozzle.

Claim.—The construction of the nozzle *s* and cylinder or case A with the piston head and rack B, constructed substantially as herein described and for the purpose set forth.

No. 45,744.—JOHN G. PERRY, South Kingston, R. I.—*Meat Cutter.*—January 3, 1865.—This invention consists in the combination of two plates cast with apertures, with bevelled edges into which the knives are secured, and also the combination of said plates and knives with the other parts of the machine, so that meat can be speedily cut for use.

Claim.—First, the combination of the knives *x x x* with the plates S, constructed substantially as described and for the purpose set forth.

Second, the combination of the knives and plates S with the case A and shaft B, substantially as herein described and for the purposes set forth.

No. 45,745.—J. G. PERRY, South Kingston, R. I.—*Stove-pipe.*—January 3, 1865.—A stove-pipe elbow cast in two segments, one having a bearded flange to shut over the edge of the other; close to this flange at either end of the elbow is a slot into which projections cast on the other segment fit. The elbow is smaller at one end than at the other. A damper is placed at a point midway between the ends.

Claim.—First, as a new article of manufacture a cast-iron stove-pipe elbow made in two parts and having one end made small enough to receive the pipe on the outside, and the other end large enough to receive the pipe on the inside, with the projections or fastenings, when constructed substantially as herein set forth and for the purposes specified.

Second, the combination of the damper with the two parts of the elbow, substantially as herein described and for the purposes set forth.

No. 45,746.—J. G. PERRY, South Kingston, R. I.—*Machine for Cutting Soap.*—January 3, 1865.—This invention consists of a trough, near one end of which slots are cut. A lever is so pivoted as to come directly under the slots, so that the wire R may be drawn down into them and through the soap.

Claim.—The combination of the wire R, lever B, and box A, substantially as herein described and for the purpose set forth.

No. 45,747.—J. G. PERRY, South Kingston, R. I.—*Window Sash Supporter.*—January 3, 1865.—This invention consists of two cams geared together by means of a tooth in one biting in a notch in the other. To the lower one is attached a lever or thumb piece, by raising which both cams are turned from each other, and the sash into the sill of which they are inserted is free to move in either direction. By releasing the lever the cams approach each other and impinge upon the frame of the window, one preventing the upward, the other the downward motion of the sash.

Claim.—The combination of the two cams or curved levers with the projections *o c*, constructed substantially as herein described and for the purpose set forth.

No. 45,748.—JOHN C. PLUMER, M. D., Portland, Maine.—*Boot and Shoe Last.*—January 3, 1865.—The object of this invention is to produce a last on which a boot or shoe can be made, which shall at once, without the tedious process of breaking in, conform and adapt itself to the contour of the solid structure of the bottom or sole of the natural human foot, so that the use of the boot or shoe shall tend to preserve its natural form, rather than to distort it.

Claim.—First, in the construction of a shoe last, the transverse inclined planes L G and Y Y, as described, in combination with the prominences G L, as described.

Second, the form and location of the prominences G L, as described.

Third, the form and location of the concavity D D D D, as described.

Fourth, the combination of the planes, concavities, and prominences, as described.

No. 45,749.—RUFUS PORTER, Malden, Mass.—*Fan Blower.*—January 3, 1865; antedated June 23, 1864.—Two cams of peculiar form are arranged to revolve in contrary directions within a box of suitable shape. These cams are so regulated in their motion by means of a combination of pitmen outside, that portions of the periphery of each cam shall be constantly contiguous, while the two ends or wings of each move in proximity to the curved sides of the box.

Claim.—The regulator I J K L M N, in combination with the cams A B in box *c*, all combined for the purpose herein specified.

No. 45,750.—T. T. PROSSER and M. C. DARLING, Chicago, Ill., and K. A. DARLING, Fond du Lac, Wis.—*Cultivator for Gang Plough.*—January 3, 1865.—In this invention the plough beams diverge, and at their forward end are secured to a cross-beam by bolts and screw-nuts upon each side of the beam, so that they can be adjusted in order to throw two ploughs further apart or nearer together. The tongue is operated by a pulley, and a chain or rope passing around a pulley; the pulley being actuated by a foot lever.

Claim.—First, guiding and regulating the movement of the tongue D by means of the pulley H, chain F, eye bolts G, attached to the side frame A and levers H, substantially as described.

Second, connecting the pair of draught arms B B, without regard to the number of pairs used, to the forward main cross-bar of the frame A by means of the double-nutted screw bolt L L, and which forms, with the plates M M, a hinge or other joint, so that while the said bars shall have a free vertical motion, they may be adjusted laterally without being detached or removed from the said cross-bar.

Third, constructing a cultivator or gang plough so that the interval between the shank N N, which supports the ploughshares, may be increased or diminished without removing the shaft bars B B, or their connections, from the main cross-bar of the frame A, when each pair of shaft bars are capable of lateral adjustment, independent of the other pair or pairs.

Fourth, the combination of lever T, rods and polls U U, operating the ratchet wheel S upon the roller O, for elevating simultaneously the several ploughs of the gang or gangs, substantially as set forth.

No. 45,751.—GEORGE B. PULLINGER, Germantown, Penn.—*Meat and Vegetable Slicer.*—January 3, 1865.—This invention consists in combining an adjustable rotating gauge plate with a rotary knife, also a frictional feed, for the purpose of moving the articles to be cut.

Claim.—First, the adjustable rotating gauge plate D, as described and for the above purpose.

Second, the scoring knives *c c c*, in combination with the rotating gauge plate, as described and for the above purpose.

Third, the slotted stay *r*, for securely holding the end of the cutter C, as above described and for the purpose specified.

Fourth, the frictional feed motion, as constructed, and operated as described for the above purpose.

No. 45,752.—W. T. RIPPON and THOS. R. ROBINSON, Providence, R. I.—*Self-oiling Spindle Bolster for Spinning Frames.*—January 3, 1865.—The claim and drawings sufficiently define the nature of this invention.

Claim.—First, the oil chamber, composed of a socket tube, with collars or flanges *d e*, applied in combination with the oil chamber *b*, formed within the rail, substantially as herein specified.

Second, the washer or gasket D, arranged within the oil chamber, and the nut C, applied to a screw thread on the bolster below the rail; the whole combined substantially as and for the purpose specified.

No. 45,753.—EDWARD S. RITCHIE, Brookline, Mass.—*Instrument to determine the Variation of the Compass.*—January 3, 1865.—This instrument consists of a box, like that of a surveying compass, with a revolving compass card on the bottom, and a rotary cross-bar with sights for ascertaining the magnetic bearing of distant objects. It is to be used in conjunction with the mariner's compass, on shipboard, to correct for local attractions. The manner of using must be gathered from the specification.

Claim.—The construction of the rotary compass cord A, the separate supporting index plate *c*, the rotary bar D, provided with sights or their equivalents, the clamp F, and the index pointer G, or its equivalent, the whole being arranged and applied substantially as specified.

Also, in combination therewith, the divided limb H and the auxiliary sight index I.

No. 45,754.—CHARLES H. ROBINSON, Bath, Maine.—*Press.*—January 3, 1865.—This invention relates to a press for baling, and consists in an arrangement of levers applied to the follower in such a manner as to render the press very compact, and also very efficient.

Claim.—The levers D D, attached to the platten or follower *c*, in combination with the swinging arms E E and the ropes O G, all being arranged and applied to operate in the manner substantially as and for the purpose herein set forth.

No. 45,755.—JOEL SANFORD, Polo, Ill.—*Water-wheel.*—January 3, 1865.—This invention consists in the construction of the buckets, each of which is formed of three arcs, described from several centres. The backs of the buckets are formed of two different curved surfaces, one being a part or a circle described from a centre which is at the centre of the radii *e e*, which intersects the radii *b* two-thirds of their length from the centre of a plate A.

Claim.—A water-wheel constructed with buckets C, each formed of three arcs described from the several centres *d f' a'*, all as herein shown and described.

No. 45,756.—DANIEL SEXTON, San Gabriel, Cal.—*Steam Engine.*—January 3, 1865.—The novelty of this invention consists in the arrangement of two pistons, which work in separate cylinders, and are connected by a rigid bar, carrying two studs, in combination with a lever secured to the end of an oscillating shaft, on which is mounted a cog wheel or pinion, gearing in toothed racks attached to two slide valves in such a manner that, by the action of the studs striking the oscillating lever, the valves are changed at regular intervals, and one cylinder takes steam, while the other exhausts, and by these means a continuous motion is effected.

Claim.—First, the two pistons D D', connected together by the bar E, and operating in open cylinders A A', in combination with the abutment C, valve H H*, and ports *d d* d' d*'*, in the manner and for the purpose substantially as herein shown and described.

Second, the lever F and sheds *a a'*, in combination with the pistons G and valves H H*, constructed and operating substantially as and for the purpose set forth.

Third, hinging the lever F, as and for the purpose specified.

No. 45,757.—EDWARD L. SEYMOUR, New York, N. Y.—*Ore Separator.*—January 3, 1865; antedated December 9, 1862.—A charge of comminuted ore having been let down upon the bottom of a drawer with a perforated bottom closely fitting into the lower extremity of a hollow cylinder or trunk, the air in the trunk above the charge is rarified by means of an air pump or bellows. This causes the air within the mass to dilate, and with the help of the ambient air which rushes through the open interstices of the bottom drawer, to momentarily suspend the particles, after which they settle according to their specific gravity—the heaviest first. The refuse being thus in a stratum by itself may be gotton rid of.

Claim.—The combination of trunk or cylinder G with the movable drawer F, for the purpose of separating and separately delivering the refuse and the concentrated portion of each separate charge, as described.

Also, in combination with the cylinder G, the air pipe V, as described, and for the purpose described.

Also, the combination of the exhausting apparatus A, or its equivalent, with the movable box F, with or without the cylinder G, as described, and for the purposes described.

No. 45,758.—LYMAN SHERWOOD, Marine, Ill.—*Cultivators.*—January 3, 1865.—In this machine two rollers are made to pass, one each side of the row of corn, for crushing the sods. Just back of each roller, a bar runs diagonally, carrying several cultivator teeth. The draught pole is fastened at a point under the front of a long seat, and plays vertically in a slotted standard on the front of the frame. The driver, by moving forward on the seat, throws the ploughs out, and the rollers then act as traction wheels.

Claim.—First, the arrangement of the frame A A' A', with its teeth or ploughs *c c*, in combination with the rollers B B, all being constructed and arranged to operate substantially as and for the purposes set forth.

Second, the arrangement of the pole E with reference to the frame A and standard *f*, substantially as and for the purposes set forth.

No. 45,759.—Edwin F. Shoenberger, Philadelphia, Penn.—*Car Seats of Railway Cars.*—January 3, 1865.—This invention consists of a longitudinal bar with teeth, in combination with a cog wheel, so connected to the back of each seat of a row in a railway car that one back cannot be turned without turning the whole, thereby preventing passengers from adjusting the backs to suit themselves, and at the same time affording means for turning the whole of the backs simultaneously.

Claim.—The bar L and its teeth, in combination with the cog wheel *f*, so connected to the backs of the whole row of seats that one back cannot be moved without disturbing the whole, as set forth for the purpose specified.

No. 45,760.—William H. Short, Brooklyn, E. D., N. Y.—*Grates for Furnaces.*—January 3, 1865; antedated August 12, 1863.—This invention consists in the arrangement of spaces between the inner ends of divided grate bars, their outer ends being held in place by hooks catching over the front plate and over the bridge wall or over bars connected with or attached to the said plate and wall in such a manner that each grate bar can expand and contract without impediment or obstruction, and consequently the said bars are not liable to injure the structure of the wall in which the boiler is set, nor are they liable to bend or break by the expansion.

Claim.—The combination and arrangement of the grate bars B so as to form spaces *c* between their inner ends in the middle of the grate A and the bevelled shoulder of the adjoining bars, substantially as and for the purpose herein shown and described.

No. 45,761.—Robert A. Smith, Philadelphia, Penn.—*Ash Cart.*—January 3, 1865; antedated July 21, 1863.—The cart is provided with a receptacle of a capacity sufficient to contain five ordinary loads. This receptacle has one permanent side and permanent ends, and is furnished with a tilting-box, operated by a shaft, by means of which its whole contents can be discharged with promptitude.

Claim.—A cart having a receptacle composed of a permanent side D and permanent ends D′, and the tilting or dumping-box G, hung or secured to a shaft F, and constructed and applied to the permanent portion of the receptacle, substantially as and for the purpose herein set forth.

No. 45,762.—J. Galusha Staunton, Buffalo, N. Y.—*Process of Preserving Organic Substances*—January 3, 1865; antedated April 3, 1862.—This invention consists in preserving fruit, vegetables, &c., by covering them with a crust or shell of paraffine.

Claim.—The method of preserving fruits, vegetables, and the like, by means of forming an external crust, shell, or covering of paraffine in contact with the body of the fruit or thing to be preserved, substantially as described.

No. 45,763.—J. Galusha Staunton, Buffalo, N. Y.—*Vessels for Preserving Butter and other Substances.*—January 3, 1865; antedated April 3, 1863.—This invention consists in constructing a can or vessel for preserving fruit, &c., of wood, which is made air-tight by an internal lining of paraffine or its equivalent.

Claim.—A new article of manufacture, a box, can, or vessel for preserving fruit, vegetables, meat, butter, spices, and the like, constructed of wood, and made air-tight by an internal lining or enamel of paraffine or equivalent, substantially as described.

No. 45,764.—J. Galusha Staunton, Buffalo, N. Y.—*Cases for Preserving Animal and Vegetable Substances During Transportation*—January 3, 1865; antedated May 5, 1863.—This invention is fully explained by the claim.

Claim.—First, a transportation case having a plurality of walls, substantially as described, in combination with a distinct ice-chest in connection therewith, for the purposes set forth.

Second, a skeleton framework of wood covered with leather, cloth, rubber, or other equivalent materials, in a manner to form a plurality of walls, which spaces may be filled with cotton, wool, or other poor conductor of heat or dead air, for the purpose and substantially as described.

Third, an ice-chest made separately from a transportation case, and so combined and connected to the outside of the case that a free communication of air from the ice to the interior case is secured, substantially as set forth.

No. 45,765.—J. Galusha Staunton, Buffalo, N. Y.—*Preserving Fruit, Meat, Fish, &c.*—January 3, 1865; antedated May 18, 1863.—This invention consists in substituting hydro-carbon gas in the place of air in cans or vessels in which fruit or other substances are enclosed for preservation.

Claim.—The substitution of hydro-carbon gas in the place of air in the cans or vessels in which fruit or other substances may be enclosed for preservation, for the purposes and substantially as above set forth.

No. 45,766.—J. Galusha Staunton, Buffalo, N. Y.—*Air-tight Boxes, Cases, &c.*—January 3, 1865; antedated May 18, 1863.—This invention consists in applying to the joints of wooden or board packages a thread or welt of rubber. The insides of these wooden packages are also coated or lined with paraffine, gum, or other similar substance, for the purpose of rendering the said packages air-tight.

Claim.—The application and use of a thread or welt of rubber throughout the joints of wooden or board packages, for the purpose and substantially as described.

Also, coating or lining the inside of such wooden packages with paraffine, warp, gum, or other impervious substance, in combination with the welted joint, for the purpose and substantially as described.

No. 45,767.—JAMES H. STEVENS, East Durham, N. Y.—*Manure-spreading Device.*—January 3, 1865.—This invention consists in applying to a wagon a movable bottom composed of an apron, which works on friction rollers, and arranged to operate as an endless belt; and in connection with this movable bottom is a fork, arranged to operate in such a manner as to discharge the manure evenly or uniformly from the wagon, as the same is fed to the fork by the movable bottom. Also, in the employment or use of a semi-conical screen attached to the rear of the wagon for the purpose of receiving the manure as it is discharged by the fork, thereby insuring a uniform distribution thereof upon the field.

Claim.—First, the two ropes *d d'*, with the shaft F, for operating the apron D and admitting of the same being moved back when the load is discharged.

Second, the semi-conical screw K at the rear of the wagon, when used in connection with a manure-discharging device, for the purpose set forth.

Third, the discharging fork I, arranged to operate substantially as herein described, in connection with the apron D, or its equivalent, for the purpose set forth.

No. 45,768.—LEONARD J. STAISTNY, Hoboken, N. J.—*Process for Preparing Refuse Wool for use.*—January 3, 1865.—This invention consists in placing the wool in a chest provided with a perforated false bottom and perforated top, and subjecting it to the action of steam. A stream of water is then forced through an aperture in one side of the chest and drives the wool towards the other side, and through an aperture provided with a net of wire, the large burrs and other bulky matter being left behind. The water is then pressed from the wool, and it is subjected to the action of a liquor, consisting of sulphuric acid of about 10° Baumé, and a temperature of 120° Fahrenheit. The wool is left in this bath for about five hours, when it is taken out and washed and placed in the known centrifugal machine. It is then placed in a drying machine, consisting of two concentric cylinders, the outer one made of sheet-iron, and the inner one made of wire gauze, and subjected to heat. It is then subjected to the action of a picking machine, which removes the dust to which the burrs have been reduced.

Claim.—The treatment of the wool as described, by applying to it, in connection with the treatment of it by an acid solution as described, but prior thereto, steam, in the manner substantially as set forth.

Also, in connection with the treatment of wool by an acid solution, as described, and after the said treatment is completed, the application of a high degree of heat to the wool during the drying process, for the purpose of burning the vegetable parts which may still adhere to said wool, substantially as described.

No. 45,769.—JOSHUA C. STODDARD, Worcester, Mass.—*Horse Rakes.*—January 3, 1865.—This invention is explained by the claim.

Claim.—The operating of the rake, to enable it to discharge its load and to bring it back to a working position by means of the adjustable shaft M, pinion P, having the cam R attached to its inner side, composed of a circular rim *e* with two recesses *f f*, the fixed roller *g*, wheel Q, and lever O, with spring *d*, all arranged and combined to operate in the manner substantially as described.

No. 45,770.—HORATIO N. TAFT, Washington, D. C.—*Combination of Pen-rack, Calendar, and Letter-balance.*—January 3, 1865; antedated No. 27, 1864.—A pen-rack supports a cylinder containing rotating disks, representing the weeks, months, and days; an ordinary letter-balance surmounting the whole.

Claim.—The calendar, constructed and arranged substantially as described, and its combination with the pen-rack.

Also, the combination of the calendar with a balance or weighing scale, and also the combination of the letter-balance with a pen-rack, as set forth.

No. 45,771.—JOSEPH T. TOMKINS, New York, N. Y.—*Method of Securing Barrel Heads.*—January 3, 1865; antedated November 24, 1861.—This invention is designed to avoid removing hoops to take out or put in the head by inserting a ridge-shaped piece centrally between the two halves, (or less than half,) which, being driven in, forces these into position; or, by withdrawing this ridge, the halves may be approached and not fall out.

Claim.—The use of the piece A, substantially in the manner and for the purposes described.

No. 45,772.—B. T. TRIMMER, Rochester, N. Y.—*Grain Separator.*—January 3, 1865.—In this invention the shoe, fan, and fan-case are combined in one body, thus dispensing with an outer casing. This combination is all supported upon the fan shaft, which has a cam in the journal for giving a shake motion.

Claim.—Combining the shoe D and fan case E′ in one body, thereby dispensing with an outer casing, substantially as herein set forth.

Also, supporting the shoe D and fan case E, combined in one body on the fan shaft *a* by means of the cams or cranks F, and in such a manner as to impart a universal vibration, substantially as herein specified.

No. 45,773.—ALFRED WALKER, New Haven, Conn.—*Caster for Furniture.*—January 3, 1865.—This invention consists of parallel grooves, which are both vertical and horizontal upon the pintle or shaft, and are traversed by a pin or projection within the socket, and so arranged that the caster is not liable to drop out of the socket, but can be taken out and put in instantly.

Claim.—A combination of vertical and horizontal grooves, with or without the rest *e*, with a pin to traverse the same, substantially as is herein described.

No. 45,774.—THOMAS H. WALTON, Ashland, Penn.—*Blasting Fuze.*—January 3, 1865.—This invention consists of a strip of wood, of a round or of any other desired form, in one side of which a narrow groove is ploughed of any suitable shape; in this groove a train of powder is laid, which is covered and protected by being overlaid with some water-proof material.

Claim.—The safety blasting fuze, constructed substantially as above set forth.

No. 45,775.—GEORGE W. WARREN, Ossian, N. Y.—*Broadcast Seeder.*—January 3, 1865.—In this machine two harrows for covering the seed are attached to a horizontal jointed bar in the rear of the seed distributer. These bars are pivoted to uprights in the centre of the harrows, and then extend beyond to the rear, thus preventing any overturning of harrows by obstacles.

Claim.—The jointed bar G, provided with the arm *p*, in combination with the harrow C, standard *m*, shaft H, and frame A, the whole so arranged that while the draught is applied centrally to the harrow, the latter is prevented from overturning, substantially as herein set forth.

No. 45,776.—E. P. WATSON, New York, N. Y.—*Combined Spur Carrier, Boot Drawer, and Pantaloon Guard.*—January 3, 1865.—A metallic plate is provided with a projecting flange and with screw holes. This plate is attached to a boot-heel so that the flange may prevent the bottoms of the pantaloons from getting under the boot-heel, may furnish a foot hold for drawing off the boot, and may serve as a support for spurs.

Claim.—A metallic plate, constructed substantially as above described, so that it can be attached by springs or screws to the heel of a boot, for the object hereinbefore specified.

No. 45,777.—WM. WEITLING, New York, N. Y.—*Sewing Machines.*—January 3, 1865.—This is a button-holing machine and uses five threads and a cord for the edge of the button-hole. Two similar eye-pointed needles (each carrying a thread) are secured to the same needle-bar: one penetrates the cloth, the other passes through the button-hole. Two other threads are so twisted by revolving thread carriers as to be laid upon and stitched to the surface of the cloth. The loops left below the cloth by the rising of both needles are both locked by the passing through them of the shuttle and its thread.

Claim.—First, the combination in a sewing mechanism of one or more revolving thread leaders and their supports with the adjustable frame of the cloth presser, so that all of them may be raised and lowered by the same mechanism, substantially as and for the purposes set forth.

Second, supporting the bobbins which supply the revolving double-thread carrier on a revolving table, for the purpose of preventing the threads from twisting before reaching the double-thread carrier, substantially as and for the purposes described.

Third, a feeding device, feeding the fabric by the action of a chisel-edged pad against the inclined under surface of an upper reciprocating pad or cloth pressure, thus operating by a pinching and direct angular pressure instead of by vertical pressure, substantially as and for the purposes set forth.

Fourth, the combination of the levers F and toggle arms G with the needle-bar C and thread-guide *g*, constituting my thread-delivering regulator, substantially as and for the purposes described.

Fifth, the application to a sewing mechanism of the turning table H′ upon the bed-plate A, serving as a support to the fabric, and having the needle as the centre of motion when said table is suspended to the needle-arm, substantially as and for the purposes described.

Sixth, securing the guide-pins O to the adjustable frame F of the cloth presser, so that they can be raised and lowered together with said cloth presser, substantially as and for the purposes described.

Also a feeding device, with smooth surfaces, operating by the angular motion of two parts acting on each other, and thus gripping the fabric between them and moving it forward, substantially as described.

No. 45,778.—B. T. M. WELLS, Franklin Centre, Vt.—*Railroad Cars.*—January 3, 1865.—This invention relates to a means for facilitating the starting of the cars whereby considerable power is gained and the team greatly relieved. Loaded cars may, when they are started, be drawn with great facility by a team which would not be able to start them, or only with great difficulty. This invention is designed to obviate this trouble in starting the cars at any time or at any point on the track where it may be necessary for a car to stop.

Claim.—The loose pulley D with draft-chain I attached, in connection with the ratchet E, attached permanently to the axle C, and the pawl F placed within the pulley, to operate in the manner substantially as and for the purpose set forth.

Also, the eccentric, G G in connection with the rod *b*, passing through the pawl F, all arranged as shown, to free the pawl from the ratchet when the pulley is thrown back, as herein described.

Also, the coil-spring H, in combination with the pulley D, ratchet E, and pawl F, arranged substantially as and for the purpose specified.

Also, the stops *g g* attached to the eccentrics G G, when used in connection with the pulley D, spring H, pawl F, and ratchet E, for the purposes set forth.

No. 45,779.—P. WERNI, Manchester, Mich.—*Converting Rotary into Reciprocating Motion.*—January 3, 1865.—This invention relates to that class of devices for converting rotary into reciprocating motion, in which a pinion is used, which has its teeth cut away on one half its circumference, and which gears alternately in the upper and lower edge of a double rack, so that by imparting to said pinion a rotary motion the double rack receives a reciprocating rectilinear motion.

Claim.—The employment of inclined planes *a d* and spring *e* in combination with the double rack A and pinion B, constructed and operating substantially as and for the purpose set forth.

No. 45,780.—JOHN B. WEST, New York, N. Y.—*Garment Measuring.*—January 3, 1865; antedated September 8, 1862.—The nature of this invention is explained by the claim.

Claim.—Using instruments substantially such as specified, or their equivalents, upon or against the specified parts of the body, in such manner that right angles or corners are formed by them at the points where they cross or intersect each other, and from the sizes and forms thus ascertained may be readily drawn by running in from a perpendicular line, producing a bust of the measured body upon cloth, which bust, used in connection with certain measures herein indicated, taken from the body, but not embraced in the bust, and with the ordinary graduated tape, serves as a guide or basis from which to draught with certainty a garment the size and shape of the body measured as set forth.

No. 45,781.—ELONZO S. WHEELER, Westford, Conn.—*Buttons.*—January 3, 1865.—The button has a tubular shank, a washer between the hub and the cloth, and a washer outside the cloth, upon which latter washer the end of the tube is turned over.

Claim.—The combination of the two washers or disks with the hollow shank and the button, substantially as and for the purposes described.

No. 45,782.—THOMAS WILES and JAMES MCGINNIS, Muscatine, Iowa.—*Cultivator.*—January 3, 1865.—In this invention two vertically-adjustable plough beams are combined with two laterally and vertically-adjustable arms. All are connected with a horizontal shaft by cords, so that a hand-lever connected with the said shaft adjusts the ploughs.

Claim.—The combination of the rising and falling or vertically-adjustable ploughs O, with the rising and falling and laterally-adjustable ploughs I, when the latter are pivoted to shafts D D, and connected to the shaft P, so as to rise simultaneously with the ploughs V, on the turning of the shaft P, as and for the purpose herein set forth.

No. 45,783.—WILLIAM WHEELER, Poultney, Vt.—*Stove.*—January 3, 1865.—This invention consists of a spherically-shaped fire-pot, the upper part being pierced with numerous small holes, through which air is admitted down upon the whole surface of the fire. The products of combustion pass through one or more narrow flues into a radiating chamber, and thence escape into the chimney. In the top of the fire-pot is an open space extending from front to back between the flues, the bottom of which is perforated to admit air into the combustion chamber. The fuel door is perforated, and a damper in the fire-box regulates the draught.

Claim.—The employment of the spherically-shaped fire-pot or chamber of combustion B, or its equivalent, with numerous small apertures *b*, in the upper surface thereof, in the manner and for the purposes substantially as herein described and set forth.

Also, the employment of the contracted and oblong throat D, and the narrow circular flues or throats D D, in the manner and for the purposes substantially as herein described and set forth.

Also, the combination of the said throats or flues D, with the said fire-pot or combustion chamber B, and with the heating or radiating chamber *c*, substantially as and for the purpose herein described and set forth.

No. 45,784.—JOHN H. WILLIAMS, Oakland, Cal.—*Window Sash Suspenders.*—January 3, 1865.—This invention consists of a sash suspender so arranged that the cord, pulleys, and plate hook are completely hid from view and exposure to the weather, the whole being so nicely balanced as to overcome a large amount of friction which exists in other methods for suspending sashes.

Claim.—The arrangement and combination of the pulley plates M M, grooves L L, plate hooks B B, and slotted bar H, substantially as described, for the purpose set forth.

No. 45,785.—SETH WILMARTH, Boston, Mass.—*Machine for Drawing Bolts by Hydraulic Pressure.*—January 3, 1865.—This invention consists in grasping the head of a bolt to be withdrawn from wood by two or more wedge-shaped jaws, sliding in inclined slots within a cavity formed in the base of the outer cylinder of a hydraulic jack, whereby an immense force may be applied in an advantageous manner, the line of draught being directly in the line of the axis of the bolt.

Claim.—A bolt-drawing machine, consisting of a vice or jaws for grasping the bolt, in combination with a hydraulic lift for withdrawing the same, operating substantially in the manner herein set forth.

No. 45,786.—EDWIN A. WOOD, Utica, N. Y.—*Steam Pressure Gauges.*—January 3, 1865. This device is made of two circular disks of sheet brass, so corrugated as to present concentric indentations in order to impart to them greater stiffness. They are placed about one-fourth of an inch apart, and are held in position by a band of the same material, with which the edge of each disk is interlocked, and to which they are soldered.

Claim.—The combination of the disks A and B, or the ring D, or their equivalents, constructed and operating substantially as described, for the uses and purposes.

No. 45,787.—HIRAM YOUNG, New York, N. Y.—*Coffee-pot.*—January 3, 1865; antedated December 11, 1861.—This invention consists in the combination of two strainers with a tube and faucet arranged within the body of the coffee-pot. The cover of the coffee-pot is constructed with an opening at its apex, through which the top and its attachments may be inserted so as to serve as a funnel.

Claim.—The combination of the two strainers E F, tube C, and faucet B, arranged with the body A, substantially as and for the purposes set forth.

Also, constructing the top or cover G of the coffee-pot with an opening at its apex to admit of the inserting of the top and its attachments to the tube C, to serve the purposes of a funnel, as described.

No. 45,788.—WILLIAM G. BELL, Boston, Mass., assignor to WILLIAM G. BELL & CO.—*Meat Cutter.*—January 3, 1865.—Removable guides are combined with the cutter heads so that, by withdrawing said guides, the cutter-heads may be inverted and the knives cleaned and sharpened without being removed from the heads, and the introduction of meat to be chopped and the removal of chopped meat facilitated. The block is vertically adjustable, and receives a rotary motion by means of an endless screw and worm wheel.

Claim.—First, the employment or use of a movable guide I, in combination with the cutter head F, substantially as and for the purpose set forth.

Second, the endless screw M and worm wheel N, applied in combination with the centre pin C, bridge B, and block D, in the manner and for the purpose substantially as described.

No. 45,789.—JOHN E. BLYTHE, New York, N. Y., assignor to M. VEDDER and HENRY S. MYERS.—*Spring Gun.*—January 3, 1865.—This invention is explained by the claim.

Claim.—The use and application to guns and pistols of one or more revolving concave rollers or pulleys upon or around which India-rubber or other elastic material is made to pass, thus securing an additional length of stretch or propelling force in a given space, increasing in proportion to the number of rollers used.

Also, the combination of India-rubber in guns and pistols, with slide-roller and groove, as described.

No. 45,790.—THOMAS N. DAVEY, assignor to himself and THOMAS DAVEY, sr., Jeffersonville, Ind.—*Machine for cutting Chair Splints.*—January 3, 1865.—The object of this invention is to facilitate the process of cutting splints for chairs, &c., and it consists in a reciprocating bed upon which are holding-dogs to hold the stock, and, upon an adjustable cross-beam are attached, on either side, two horizontally adjustable plates, to which are attached sliding plates, and to these are hinged tool-carrying arms, so that, as the bed reciprocates, it carries the stock against the knife which cuts a splint, and when it reverses the direction the stock is brought in contact with a knife on the opposite side of the beam, which, in like manner, cuts another splint in the opposite direction to the first, and so continues till the stock is cut into splints.

Claim.—First, the reciprocating bed B, provided with the dogs c c' c'' c''', in combination with the endless belt C, with pin or stud g attached, and the slotted bar E at the under side of the bed in which the pin or stud works, substantially as and for the purpose specified.

Second, the beam J, with adjustable blocks K K, attached, the latter provided with the vertical sliding blocks L, having cutter bar or stocks M secured to them by hinges *q*, when said parts are used in connection with a reciprocating bed B, as and for the purpose specified.

Third, the means employed for automatically feeding the beam J, downward, to wit: the bent arm *b'*, rod S, rock-arm R, pawl *a'*, and ratchet *b*, in connection with the projection *a* on the bed E, all arranged substantially as set forth.

Fourth, the knives N N', attached to the bars or stocks M, in connection with the guard plates O, substantially as and for the purpose specified.

No. 45,791.—William Delton, assignor to himself, Charles W. Baker, James M. Sheehan, Michael Tooney, Lawrence R. Fitzgerald, and James T. Derrickson, New York N. Y.—*Manufacture of Paper Stock.*—January 3, 1865.—This invention consists of a tank in which is a partition provided with a gate. In the smaller portion of the tank is a series of perforated steam pipes which radiate from a central pipe. In this portion of the tank the caustic alkaline solution is prepared by means of lime, steam being admitted through the perforated pipes in order to heat it and agitate it, after which it is allowed to flow into the larger portion by raising the gate. From this tank the alkaline solution is conveyed to another tank to operate on the fibrous material. The said tank is made with a perforated bottom, beneath which are steam pipes, by means of which the contents of the vat may be heated.

Claim.—First, the tank *a* partitioned off at *b*, and provided with the perforated steam pipes *e e*, for the purpose and as specified.

Second, boiling the vegetable fibre in the vegetable caustic alkaline solution when said vegetable material is sustained by a perforated bottom above heating pipes, as set forth.

Third, the treatment of vegetable fibre by an alkaline solution prepared in the manner and of the material set forth.

No. 45,792.—Henry G. Gladding, Providence, R. I., assignor to himself, W. Coleman & Sons, and Joseph Ralph.—*Drop Press.*—January 3, 1865; antedated June 20, 1863.—The hammers are elevated by means of a lifting strap passing between two revolving surfaces, which are made to gripe or release said strap at will. The necessary tension of the lifting strap is maintained by its being wound around a pulley, whose circumference exceeds the length of the strap. A spring serves to keep the strap taut during the rebound of the hammer, so that the strap may be seized and the rebound arrested. The ascent or descent of the hammer may be arrested at any point, or its velocity be accelerated or diminished, by means of a brake acting on the lifting strap. The guides are secured to the anvil, so that they are not disturbed by the blows or removal of the hammer. A vertically sliding punch removes the metal shape from the die.

Claim.—First, the combination and arrangement as set forth of the friction pulley D and the winding pulley G, with the strap of a drop-hammer, substantially as herein described, for the purpose specified.

Second, in combination with a suitable device for elevating a drop or hammer to any desired height at will, a spring force suitably arranged, acting with sufficient swiftness to take up any slackness in the lifting strap occasioned by the rebound of the hammer, substantially as herein shown and described, for the purpose specified.

Third, in combination with the lifting strap of a drop hammer, a break or stop, having a nipping or binding action, conveniently arranged with a hand lever or other suitable device, and operating substantially as herein shown and described, for the purpose specified.

Fourth, the peculiar manner herein shown and described of securing the guides to the anvil to effect the purpose set forth.

Fifth, constructing one of the guides with a movable piece, substantially as herein shown and described, for the purpose specified.

Sixth, the peculiar construction and arrangement herein shown and described of the hubs or heads S S S S, to effect the purpose set forth.

Seventh, in combination with the anvil and die of a drop press, the sliding punches and percumine lever K, arranged and operating substantially as herein shown and described, for the purpose specified.

No. 45,793.—Joseph Fleischman, New York, N. Y., assignor to himself and Aloes Fleischman, Olmutz, Austria.—*Process of Preparing Grain for Distillation.*—January 3, 1865.—This invention consists in adding carbonate of soda, or equivalent alkali, to the acid solution in which the corn is soaked, preparatory to distillation, in order to neutralize any sulphuric acid that may be carried over in the process of charging the water with sulphuric acid gas.

Claim.—The use of the method or process hereinbefore described of treating or preparing Indian corn and other cereals in the manufacture of alcohol and spirits, as an improvement upon Aloes Fleischman's patent of July 12, 1864, for a like purpose.

No. 45,794.—Franklin L. Hicks, assignor to Benjamin and Phineas Lawrence, New York, N. Y.—*Inkstand.*—January 3, 1865.—This invention consists in the construction of an elastic bottom, with a cam-turning rod, so as to raise the ink to the cup when required.

Claim.—The combination of the elastic bottom of the inkstand with the turning rod and cam, for the purpose and as specified.

No. 45,795.—HENRY W. HOLLY, assignor to himself and JOHN T. FANNING, Norwich, Conn.—*Perpetual Calendars.*—January 3, 1865.—This invention consists of two rollers placed on a common shaft, and having an independent movement. Upon one of the cylinders are placed the names of the days of the week; on the other, the names of the days of the month, arranged in spiral lines. The calendar can be adjusted for each month by adjusting one cylinder, so that the day of the week on which the month commences comes opposite No. 1 on the other cylinder. The double rollers are supported in bearings in a paper-weight or inkstand, or any other article in use on a desk.

Claim.—The use of the rollers A B, marked as described, and applied to a common axle C, which has its bearings in suitable lugs rising from a paper-weight or in a pen rack, or other similar article, in the manner and for the purpose substantially as set forth.

No. 45,796.—HARRISON OGBORN, Richmond, Ind., assignor to himself and ALMOND T. CHAPIN, Paw-Paw, Mich.—*Fanning Mills and Grain Separators.*—January 3, 1865.—The features of novelty in this invention are too numerous to admit of a brief description as to their nature; but they are, in general terms, intended to adapt the machine to perform its work in an effectual manner, while tending to simplify the construction and reduce the cost of manufacture.

Claim.—First, the rocking support K, adapted to transmit motion to the shoe E, in the manner explained, and constituting a medium for preventing the existence of a counter current of air, thus increasing the efficiency of the operating current.

Second, supporting the shoe at its rear end by means of arms O, provided with elliptical or oblong apertures *o* fitting over screws or bolts having elongated heads *o'*, which admit of the ready adjustment of the arms O, as and for the purpose explained.

Third, the strip or flexible attachment P, for giving a vertical motion to the screw I, simultaneously with its reciprocating movement, substantially as described.

Fourth, the bearings I2, when curved in such a way as to allow the arms *i'*, which they support, to be readily removed for adjustment, while preventing their accidental displacement, as herein set forth.

Fifth, the combined screw and grain board D D', arranged and employed in the manner and for the purposes specified.

Sixth, the deflectors or guides J J, for regulating the fan blast when the same are pivoted directly to the main frame of the machine (in contradistinction to being pivoted to the shoe) and adjusted by means of the catches *j* and holes *a*, in the manner and for the purpose explained.

Seventh, in combination with the doors Q, of the fan case, the slotted bar R *r* and pins or projections *q q*, arranged to operate substantially as and for the purpose described.

Eighth, the circular distributor C2, employed to prevent the grain from accumulating at the centre of the screw D, substantially as and for the object specified.

Ninth, the grooves *d' d'*, in combination with the flange *f* of the screw F, said groove and flange admitting of the formation of a continuous conductor for the grain in both positions of the box D D' D'', substantially as explained.

No. 45,797.—JOSEPH RIDER, Newark, Ohio, assignor to himself and E. REMINGTON, Ilion, N. Y.—*Breech-loading Fire-arms.*—January 3, 1865.—The rotating breech piece is hung in the frame, working vertically and longitudinally, opening and closing the breech; the hammer is attached to the axis of the tumbler, and the latter firmly locks the breech piece before the hammer strikes the charge.

Claim.—First, the combination of the hammer, tumbler, and swinging breech piece, operating together, as and for the purpose substantially as described and represented.

Second, in combination with the tumbler, breech piece, and sear, the sear guard *e e* operating therewith, as and for the purpose substantially as described and represented.

No. 45,798.—THOMAS SWAN, Manlius, N. Y., assignor to himself, E. B. ALFORD, A. W. FIELD, and JAMES COBURNE, Syracuse, N. Y.—*Reaping and Mowing Machines.*—January 3, 1865.—This invention relates to the means of imparting motion to the cutters, and will be readily understood from the claim and engraving.

Claim.—First, the wheel D, provided with teeth *e* carved at one side, as shown at 1, in combination with two pallets E E', connected by the rod F, all arranged to operate substantially as and for the purpose herein set forth.

Second, the rock shaft J, provided with the pendant arm K, and operated through the medium of the arbor I and arm G, when said parts are used in combination with the wheel D, pallets E E', and rod F, and all arranged in the manner substantially as and for the purpose set forth.

Third, the elastic bumpers N N, in connection with the vibrating arm K, substantially as and for the purpose herein specified.

No. 45,799.—Mary P. Waters, administratrix of W. E. Waters, (deceased,) East Bend, Ky., assignor to Aquila H. Pickering, Salem, Iowa.—*Pumps.*—January 3, 1865.—A hollow piston rod moved vertically in a cylinder, in its descent receiving water from below, and in its ascent receiving water from above, the latter supplied from a transverse channel, beneath the main cylinder, through a narrow channel at one side thereof, communicating through an opening at the top of the septurn. Within the piston a valve is set centrally upon bearings so as to guide the alternate currents into the hollow rod, with the alternating movements of the pump.

Claim.—In combination with the hollow piston shaft G, cylinder A, and side passage or pipe B, a piston E, so constructed that the water in both the up and down stroke will be forced centrally through the piston into the tubular shaft G, substantially as described.

Also, providing the piston E with the independent port frames I I′ and the valve K moving between them, so as alternately to close each in the upward and downward strokes, substantially as herein specified.

Also, the special construction and arrangement of the piston as a whole, the same being provided with the induction passages *i i*, ports I I, valve K, and angular space *l*, substantially as described.

Also, in combination with the pump cylinder A, side passage or pipe B, and valves *g g′ f f′*, the elongated passage D opening on one side upward by the mouth *h*, substantially as and for the purpose herein set forth.

No. 45,800.—George Woods, Cambridge, Mass., assignor to Mason & Hamlin, Boston, Mass.—*Musical Instrument.*—January 3, 1865.—This invention consists in a peculiar manner of coupling the keys, by which thirds, fifths, and octave notes may be played together.

Claim.—First, the wire coupler K, running diagonally from key to key of any chord, having bent arms, as described, one of which is operated upon by the key played, while the other operates the other key, under a mode of construction substantially as above set forth.

Second, the movable disconnected fulcrum bar *h*, constructed and operated substantially as described, to effect the construction and disconnection of the couples with the keys, as above set forth.

No. 45,801.—Cosme Garcia Saez, Madrid, Spain.—*Breech-loading Fire-arms.*—January 3, 1865.—The breech chamber, in which rotates the breech containing the charge, is the extension of the rear end of the barrel, or the barrel can be screwed into it. Although in one piece, its rear is open, but the jaws are in close proximity and are drawn together by a screw, operated by a lever on the top. When the faucet breech is in position for firing, the jaws are tightened, hugging the former more tightly, and making a gas-tight joint between the two. To load, the jaws are loosened and the breech turned back.

Claim.—First, forming the breech chamber, as described, of one piece, divided in the rear, so as to admit of contraction or expansion by the application of a suitable tightening device, as set forth.

Second, in combination with an expansible breech chamber, a new and actuating lever, constructed and arranged for operation for rendering the parts of the breech gas-tight, as set forth.

No. 45,802.—Edouard H. Vittecoq, Beaumontel, France.—*Bolting Mill.*—January 3, 1865.—Coarse bran and crushed grain are introduced and caused to circulate freely within the bolt, so that the meal or flour is cooled and prevented from clogging the meshes of the bolting cloths. In this way cloths with very fine meshes may be employed, whereby the flour is more perfectly sifted. No tappets or beaters are made use of, and thus the injury which they cause to the cloth is avoided.

Claim.—The construction and arrangement of bolting mills, substantially as set forth, for operation in the manner and for the purpose described.

No. 45,803.—M. B. Mason, assignor to C. V. De Forest, Amos Howes, and George Van Derburgh, New York, N. Y.—*Method of Desulphurizing and Oxidizing Metallic Ores.*—January 3, 1865.—This invention relates to treating auriferous pyrites and other similar ores with the gases formed by decomposing steam, or superheated steam, by means of carbon or coal. The coal is placed in an ordinary fire-box, with grate bars, so as to allow a good draught of air to support combustion. Steam from a boiler, which may be heated by the waste gases of the furnace, is brought into the incandescent coal in the fire-box. The resulting gases are passed into the chamber containing the ore to be treated. For the purpose of regulating the temperature of the gases in the ore chamber, and to assist in oxidizing the metals, an additional supply of steam is passed into the ore chamber without being passed through the fire-box.

Claim.—Improved process for removing sulphur, arsenic, phosphorus, and antimony from auriferous or other metallic ores, and for oxidizing the said ores, by treatment of them with hydrogen and carbonic acid gases, substantially in the manner herein set forth.

Also, the admission of steam into the chamber wherein the metallic ores are heated, desulphurized, and oxidized, substantially in the manner and for the purpose herein set forth.

No. 45,804.—M. B. Mason, assignor to C. V. De Forest, Amos Howes, and George Van Derburgh, New York, N. Y.—*Furnace for Desulphurizing and Treating Auriferous and other Metallic Ores.*—January 3, 1865.—This invention consists of a furnace larger at the top than at the bottom, built over a combustion and gas-generating chamber. This combustion chamber is fitted with a grate and ash-pit, and is provided with one or more hollow perforated grate bars, or with equivalent pipes or tubes connected with a steam generator. The combustion chamber is formed by an arch, and extends through the walls of the ore chamber, its ends being furnished with doors and draught openings for the admission of air. The heat, gases, and air pass out of the combustion chamber directly into the ore chamber through a series of openings; and to prevent an excessive degree of heat in the ore chamber steam may be admitted through the passages. The ore is admitted through an opening in the top of the furnace, and is discharged through passages. The products of combustion pass out through openings into an encircling flue, and from thence into a suitable chimney, or they may be carried under a boiler, in order to utilize the waste heat.

Claim.—First, a fire chamber for generating gases by the decomposition of steam therein, substantially as described, arranged in combination with a separate chamber for containing and treating metallic ores, substantially in the manner and for the purpose herein set forth.

Second, the generation of gases by the decomposition of superheated steam within a suitable fire chamber, when said gases and like products of combustion in this fire chamber are conducted into and through a separate chamber containing metallic ores, for the purpose of desulphurizing and oxidizing said ores, substantially as herein set forth.

Third, when a fire chamber for generating gases is combined with a separate chamber for treating ores, substantially as hereinbefore described, I claim the introduction and use of steam in said ore chamber, for the purpose of preventing excessive heat therein, substantially as herein set forth.

No. 45,805.—James Adair, Pittsburg, Penn.—*Lamps.*—January 10, 1865.—This invention consists in forming the points and opening in such a manner as to prevent the descent of the heat from the flame to the oil reservoir, the devices being designated in the claim and shown in the engraving.

Claim.—First, the construction of the screw *k i*, with a flattened spheroidal or lozenge-shaped chamber B about it, substantially in the manner and for the purpose described.

Second, making the spheroidal chamber of open work or perforated plates, substantially in the manner and for the purpose described.

Third, constructing the spheroidal or lozenge-shaped chamber of the cone *a* with a screw *d'*, box *e*, with tube and wick-adjuster, substantially in the manner and for the purpose described.

Fourth, the combination of two or more spheroidal or flattened chambers, substantially in the manner described.

Fifth, the combination of my specified insulator with a lamp, substantially in the manner and for the purpose described.

No. 45,806.—John S. Adams, Taunton, Mass.—*Igniting Hand Grenades.*—January 10, 1865.—A friction or cannon primer is securely attached to the time-fuze inserted in the grenade, a hook which is attached to a strap secured to the wrist being inserted into a loop formed on the end of the wire of the friction primer after the grenade is taken into the hand. When the grenade is thrown the hook pulls out the wire of the friction primer just after the grenade leaves the hand, and thus ignites the time-fuze.

Claim.—The combination of the recess E, the metallic disk D, the hook slot F, the waterproof cap G, and the opening tape H, all arranged substantially as and for the purposes set forth.

No. 45,807.—W. D. Ament, Muscatine, Iowa.—*Cultivator.*—January 10, 1865.—This invention relates to a block which is placed upon each of the standards supporting the shares. This block is secured by a pin, and is adjustable in regard to height, which thus regulates the depth of the ploughing.

Claim.—In combination with the standards D D, adapted to be operated by treadles so as to move the ploughs vertically and laterally, I claim the adjustable blocks G, resting upon the plates E, and employed to vary or regulate the depth to which the ploughs penetrate the ground, in the manner herein explained.

No. 45,808.—Jonathan Ball, Elmira, N. Y.—*Machine for Manufacturing Cigars.*—January 10, 1865.—This invention consists in having a suitable table upon which is fixed a mould passing perpendicularly down through the leaf of the table. On the top of the mould is an adjustable cup or hopper, in which the tobacco is placed. On the back of the table is a post with a projection on the top, extending forward, through which is a wire extending to the bottom of the mould; this wire also passes through a follower that is used for pressing the tobacco into the mould.

Claim.—First, the use of a wire *c*, and tamper F, perforated through its longitudinal cen-

tre, as described, in combination with the mould *c*, or its equivalent, and with a suitable wrapper, constructed and operating substantially as and for the purpose herein described.

Second, the method, substantially as herein described, of introducing the filling of a cigar around a central wire, for the purpose of producing a central draught.

Third, manufacturing cigars by first inserting the wrapper into a mould and afterward filling in the tobacco, substantially as herein specified.

Fourth, in combination with a machine constructed as herein described, I claim the cup or funnel G, employed to hold the wrapper in position, and admit of the introduction of tobacco after the tamper is inserted, as explained.

No. 45,809.—JOHN BEST, Pittsburg, Penn.—*Manufacture of Glass.*—January 10, 1865.—This invention consists in making crystal glass by substituting coarse granular marble for the slaked lime generally used in the batch. The batch used in this invention consists of granular marble pulverized, clean sand, soda-ash, and nitrate of soda.

Claim.—The use of the ingredients hereinbefore described, which I call granular marble, as a substitute for slaked lime or oxide of lead, in combination with the other ingredients composing the batch or mix, as herein before specified, or some of them, or their equivalents, in the manufacture of crystal glass, substantially as herein before described.

No. 45,810.—JACOB W. BOPE, St. Louis, Mo.—*Harvesters.*—January 10, 1865.—This invention consists of two levers which radiate from movable centres, and are combined with segments upon the main frame in such a manner as to effect a perpendicular up and down motion of the finger-bar in front. In connection with the levers and the segments are used hinged stirrups for attaching and moving the finger-bar as required. The reel is raised and lowered by means of the levers extending under the shaft, and connected with the finger-bar, whereby the reel is kept equidistant from the cutting mechanism.

Claim.—First, the levers D D. radiating from movable centres, in combination with the segments arranged on the main frame, for effecting a perpendicular up and down motion of the finger-bar in front, as described.

Second, the combination of the levers D, the hinged stirrups E, and the segments C, for attaching and moving the finger-bar, in the manner described.

Third, raising and lowering the reel, by means of the levers extending under the shaft, and connected with the finger-bar, as described, whereby the reel is kept equidistant from the cutting mechanism, as herein set forth.

Fourth, the arrangement of the sliding friction roller *f*, on the lever arms *a a*, as and for the purpose herein described.

No. 45,811.—JACOB W. BOPE, St. Louis, Mo.—*Corn Harvesters.*—January 10, 1865.—This invention relates to the means for gathering the stalks, and for forming the gavel and discharging the same. Behind the cutter on each side is hinged a table, the rear edge of which is free to conform to the ground, which, with the lower part of a bent rod, forms the bed for the gavel, and an inclined standard is attached to the frame as a guide for the stalks to this bed. The aforesaid rod passes through a loop at the lower end of the guide, and is then bent upward to the upper part of the guide, to which it is pivoted, and is then bent inward over the frame and attached to a foot lever, the motion of which withdraws the lower part of the rod from under the gavel, which is then discharged.

Claim.—First, the sliding rod *f*, or its equivalent, provided with a foot lever, in combination with the guide G and hinged table E, substantially as and for the purposes specified.

Second, the reel F, provided with six or more straight arms, having one or more wires running through them, said wires crossing each other, or being bent to form such angles, that the stalks are gathered and discharged with ease and certainty, substantially as shown and described.

No. 45,812.—D. C. BREED, Lyndonville, N. Y.—*Coupling Thills to Carriages.*—January 10, 1865.—This invention consists in the use of an eccentric coupling bolt, so connected with the jaws that it cannot turn. The rattling of the bolt and its liability to get out of its place are thus avoided.

Claim.—The eccentric bolt C, provided with cams *a a*, in combination with the jaws *b b*, thill hook *d*, and packing E, substantially as and for the purpose herein set forth.

Also, securing the eccentric bolt in place, when thrown back, by means of the depression *g*, formed partially in the jaw and partly in the cam *a*, into which depression fits the rim *h* of the nut G, the whole arranged and operating substantially as and for the purpose herein specified.

No. 45,813.—WILLIAM BURNET, New York, N. Y.—*Paper File.*—January 10, 1865.—This invention consists of two plates of wood, one being longer than the other. They are held together by a metal loop and spring, which hold the papers by an equable pressure.

Claim.—A file made of two leaves secured together by a hinge bar and kept together by means of spring pressure thereon, all made and operating substantially as above described, or their mechanical equivalents.

No. 45,814.—Benajah J. Burnett, Mount Vernon, N. Y.—*Ventilator.*—January 10, 1865.—This device is designed for roofs of houses, &c. The body is divided by intersecting partitions with four or any desirable number of chambers. At the top and bottom of the said chambers are deflectors; the first being inclined downwards, and the latter upwards. A wide overhanging cap covers the top, immediately under which, and opposite the upper deflectors, are narrow openings extending across all the chambers, and provided with hinged shutters, to which brackets are attached, so that they may be stopped in a downward inclined position if desired. The openings opposite the lower deflectors are below the roof.

Claim.—A ventilator composed of an upright trunk A divided into chambers *a a*, having openings *e f* above and below the roof, with opposite inclined deflectors *c d*, substantially as herein specified.

Also, the hinged shutters *g g*, with their attached brackets *h h* so applied in combination with the upper openings *e e* of a ventilator, of a construction, substantially as herein described, that when open the said shutters form deflectors to encourage the entrance of air into said openings, substantially as herein specified.

No. 45,815.—William Cox, Philadelphia, Penn.—*Car Springs.*—January 10, 1865.—This invention consists in applying wooden or steel springs, or both, to a railroad car in such a manner that the weight of the car is distributed or transmitted to the bearings of the axles from each end, and from the centre of the car at each side of the same.

Claim.—The tapering springs D D secured to the sills *b b* of a railroad-car truck, and resting upon lips *a a*, projecting from the journal bearing C, all being arranged to operate in the manner and for the purposes herein described.

No. 45,816.—Louis Cramer, Brooklyn, N. Y.—*Spinning Top.*—January 10, 1865.—This invention relates to tops where a spring is used to give rotation, and in this case a notch in the lower end of a tube is used to hold the top, which has been wound up, until by pressure it may be disengaged simultaneously with the spring.

Claim.—A notch *e*, in the hollow arbor *b*, in combination with the ratchet teeth *g* on the barrel *c*, which encloses the spring *d*, and with the pin *f*, projecting from the shank of the top, constructed and operating substantially as and for the purpose set forth.

No. 45,817.—W. H. Crichton, La Porte, Ind.—*Seeding Machine.*—January 10, 1865.—In this invention rotating-pointed wheels are fixed upon the shaft in the seed box, between each of which wheels are inclined planes to carry the seed to the openings upon the rear side of the box. A perforated plate can be adjusted so as to register wholly or partially with the seed openings. These wheels are operated from the axle, and thrown out of gear by a hand lever at the driver's seat.

Claim.—The rotating-pointed wheels J, fitted on a shaft I within the seed box H, with double-inclined planes *c c* between them and the wheels, working in recesses *b* in the rear side of the seed box, in combination with the fixed perforated plate L and the adjustable perforated plate M at the rear of the seed box, all arranged substantially as and for the purpose set forth.

No. 45,818.—David Decker, New York, N. Y.—*Piano-fortes.*—January 10, 1865.—This invention consists in having agraffs for the treble strings made with their heads projecting to one side of the screw, thus giving a firmer hold in the wood.

Claim.—The construction of the agraff used in piano-fortes, substantially as herein described, whereby the face of its head, which is toward the hammers, may be flush with or project slightly beyond the edge or face of the wrest plank, while its screw is entirely enclosed in the wood of the said plank, and a sufficient supporting thickness of wood is left on the outer side of it to obviate the necessity of securing it into the iron plate.

No. 45,819.—J. Frederick Dubber, Brooklyn, N. Y.—*Pocket-book.*—January 10, 1865.—This invention consists in providing the flap with a metal spring which keeps it closed, and retains the outer folds of the book in position.

Claim.—A pocket-book, provided with a strip of steel *d* in the edge of its closing flap *c*, as a new article of manufacture.

No. 45,820.—Oscar T. Earle, Springfield, Mass.—*Valves for Steam-engines.*—January 10, 1865.—The object of this invention is to so arrange the steam ports in conjunction with a plain cylindrical slide-valve, having one or more grooves or recesses, that the valve shall be perfectly balanced, and be actuated by the simple reciprocating motion obtained directly from the piston rod.

Its novelty consists in the ports I through the valve leading behind its ends into the steam chests, and, at proper intervals, coinciding with the ports of the valve seats. The arrangement of the parts K and K′ with the ports I and I′, valve E, ports F and F′, with piston B and valve E.

Claim.—First, a cylindrical slide-valve, constructed with one or more ports through it, the said port or ports leading behind the ends of the valve into the steam chest, and at proper

intervals coinciding with ports of the valve seat, substantially as and for the purposes set forth.

Second, the arrangement of ports F and F′ with piston B and valve F, when operating substantially in the manner and for the purposes herein described.

Third, the arrangement of the ports K and K′ with the ports I and I′ and valve E, when operating substantially as herein described.

No. 45,821.—Chvrles W. Emery, Dorchester, Mass.—*Machine for Clipping Hair or Wool from Animals.*—January 10, 1865.—This invention consists in attaching to a circular cutting plate a series of shear blades by means of pivots, this circular plate having a cam annexed to it in which there is a zig-zag path in such a manner as to give a vibrating motion to the shear blades, and also in connection with this is a spring, pivoted to the back of the machine, for locking and unlocking the circular plate at proper intervals, so that it may remain at rest while the cut is being performed, and again revolve while the blades are open.

Claim.—First, a series of shear blades attached by pivots to a circular cutting plate in combination with a circular undulating path cam, formed in such a manner as to give a vibratory motion to the shear blades, substantially in the manner and for the purpose herein described.

Second, the device herein described for rotating the circular cutter plate, and locking and unlocking it at proper intervals, so that it may remain at rest while the cut is being performed, and again revolve while the blades are open, substantially as herein set forth.

No. 45,822.—Samuel L. Fox, Philadelphia, Penn.—*Tube Packing.*—January 10, 1865.—The object of this invention is to so arrange elastic material that tubes of oil and other wells or other surfaces, fixed or movable, may be packed by the expansion of its walls against a well or other external obstruction, and against a pump pipe or other inner obstruction, by means of a fluid being forced between the inner and outer walls of a flexible packing-box.

Its novelty consists of a packing case constructed with flexible sides, so as to pack tubes for oil wells or other purposes, and to render the packing-case movable and expansible.

Claim.—First, packing pump tubes of oil and other wells, or other tubes or pipes, by means of a movable packing case, with expansible sides, substantially as above described.

Second, the packing-case Q, constructed and operated substantially as above described.

No. 45,823.—Daniel D. Gitt, Arendtsville, Penn.—*Harvester.*—January 10, 1865.—This invention relates to the manner of applying a friction roller and its guiding box to the heel end of the cutting apparatus, and is explained by the claim.

Claim.—First, mounting the friction roller upon the pin which unites the connecting rod with the sickle, when the said roller occupies a central position in relation to both, as shown and described.

Second, in combination with the above, the employment of a box closed on top, for the double purpose of guiding and protecting the anti-friction connecting device, substantially in the manner described.

No. 45,824.—Ira Hart, Clarksburg, W. Va.—*Head Blocks for Saw-mills.*—January 10, 1865.—The object of this invention is to simplify the devices for adjusting the log to the saw while on the head block, and it consists in a sliding-knee on which works a clamp that can be, by means of a lever attached to the shaft having a curved arm, connected with a link that is attached to the clamp and a spring catch, so that when the lever is operated the spring catch takes hold of and retains the clamp in such position in the knee that it will move the slide in either direction at the will of the operator.

Claim.—First, the sliding-knee B and clamp H in combination with the link G and shaft E, or their equivalents, when constructed substantially as and for the purpose specified.

Second, the combination of the clamp H, guide I, and spring M, when constructed substantially in the manner and for the purpose specified.

No. 45,825.—W. H. Hartman and Samuel Sheller, Fostoria, Ohio.—*Combined Seeding Machine, Roller, and Drag.*—January 10, 1865.—This invention consists in attaching a harrow to a seeding machine, so that the harrow will have a lateral motion imparted to it by means of a crank and pitman connected to the traction roller and harrow.

Claim.—The special arrangement of the jointed dray F, lever G, chains *g h*, in combination with the seeding apparatus and adjustable rollers B B, when arranged and operating as and for the purpose set forth.

No. 45,826.—S. Ross Higgins, Parma, Mich.—*Hay Loading Machine.*—January 10, 1865.—The object of this invention is to provide a machine for loading hay upon wagons from cocks or windrows in the field. Upon a mounted frame is placed a turn-table, to which a long arm is hinged, said arm being provided with a fork which has a guard. The machine is so connected with the draught animal that it may be drawn from place to place, the fork lowered and adjusted to its work, and then raised with its load over the wagon and discharged, the labor being performed by the animal, while the attendant guides the machine by means of a caster wheel, and manipulates the parts.

Claim.—First, the turn-table G, placed on a mounted framing A and having a fork bar J connected to it, operated by means of a rope N under the action of the draught animal, substantially as and for the purpose set forth.

Second, the guard M, with its forward and rear bars l' and l, and pivoted to the fork bar J, in combination with the pivoted fork K and the rope N, by tension, in which the guard is pressed down upon the hay, the whole arranged substantially as and for the purposes described.

Third, the caster wheel C, when used in combination with the framing A, turn-table G, fork bar J, and fork K, for the purpose described.

Fourth, the bar Q on the rope N, in connection with the notch *o* in the shaft H, and the rope R and spring S, for the purpose set forth.

No. 45,827.—OLIVER T. HOLBROOK, Rushville, N. Y.—*Reaping and Mowing Machine.*—January 10, 1865.—This invention is explained by the claim.

Claim.—First, the combination with the main frame *c*, constructed as described, of the secondary frame D and plate B, arranged and operating in the manner set forth.

Second, the cutters K, formed with a slit in the rear, as shown and described, when arranged upon and secured to the bar in the manner specified, whereby one part of the rear end thereof is elevated above the other, for the purpose and in the manner set forth.

No. 45,828.—EDWARD P. HUDSON, Washington, D. C.—*Manufacture of Steel.*—January 10, 1865.—This invention consists in decarbonizing iron by placing it in the puddling furnace and treating it as if it were to be converted into wrought iron. When the metal assumes the state of fine granular particles, it is exposed to a flame so regulated that it shall not oxidize the metal. When the decarbonization has been thus completed, the whole mass is removed from the furnace. The metal is then cooled and subjected to the action of stamps, in order to separate it from the cinder. The metal thus decarbonized is mixed with pig iron and melted.

Claim.—The manufacture of cast steel by combining decarbonized iron, prepared substantially as herein described, with pig or other carbonized iron, as herein specified.

No. 45,829.—SIDNEY HUDSON, Milford, Mich.—*Tallying Machines for Measured Grain.*—January 10, 1865.—The bottom of the box in which the grain is measured is of semicircular form, and closed by a swinging plate attached to a vertical bracket or plate pivoted at its upper part to the side of the box. By a crank movement this plate is moved back and forth, alternately closing the box and discharging the grain. A pawl upon the upper part of the bracket operates a ratchet wheel to give motion to a registering apparatus, such as have been before used.

Claim.—The combination and arrangement of the several parts which produce the result, in the simple, concise and effective form described.

First, the circular hopper slide L, as attached to oscillating plate B which works dog *d*, as described; also crank C, the journal of which passes through a slot in plate B, and is attached near the edge to ratchet R, which is held from turning back by dog S, which prevents slide L being closed without tallying, when the parts are arranged to operate as and for the purpose described. This combination will work several varieties of registers.

Second, the combination of the ratchet wheel E with cog wheel H, which works over the centre of E; also cog wheel *x*, which gears with H and works near the edge of E, one cog at a time extending beyond the edge of E, which, at every revolution of E, comes in contact with stop I, by which wheels *x* and H are moved forward one point on their respective dials.

Also spring D, which is used to keep the machinery in place, when arranged in combination as and for the purpose herein shown and described.

No. 45,830.—SAMUEL JACKSON, Philadelphia, Penn.—*Cartridges.*—January 10, 1865; antedated January 3, 1865.—This invention consists in having an exterior case with a tight joint, and a metal lining with a loose joint.

Claim.—The combined paper and metallic cartridge case, when constructed and arranged to operate substantially as set forth.

No. 45,831.—CHARLES JARVIS, Ellsworth, Maine.—*Root Cultivator and Weeder.*—January 10, 1865.—In this invention the front edges of the upright rectangular cutters are made to project beyond the horizontal blade, so as to divide the ground in advance, thereby leaving the rows or hills smoother. The cutters are inserted by their upper ends through a horizontal bar connected with the draught axle by arms, in the outer extremities of which the axle revolves.

Claim.—First, constructing the front edges *n* of the sides *g g* of the cutters G so as to project beyond the latter, substantially as and for the purpose described.

Second, the cutters G, arranged as described, in combination with the bar A, tongue B, and wheels F, substantially as and for the purpose specified.

No. 45,832.—FRANK G. JOHNSON, Brooklyn, N. Y.—*Bed Bottom.*—January 10, 1865.—This invention consists in applying the common cord to a simple rectangular frame in such a manner as to provide a desirable spring bottom for beds. The engraving will show the manner of cording.

Claim.—The peculiar manner in which the cord is laced into the frame A B C D, so that no two consecutive cords are parallel to each other, substantially in the manner and for the purposes herein set forth.

No. 45,833.—ADAM KECK, Montgomery, Ill.—*Cultivators.*—January 10, 1865.—In this invention there are three leading features: first, in relation to the adjustment of the bearing wheels longitudinally, for the purpose of making the machine balance the driver when in the seat; second, in the attachment of the inner set of ploughs to a vibrating beam working upon a pin and placed transversely to the line of draught; third, connecting the outer plough beams with the adjusting plate for the wheels.

Claim.—First, the attaching of the axles C of the wheels B to plates D, secured to castings E at the under side of the framing A by means of bolts *a* passing through oblong slots *c* in the castings, substantially as shown and described, to admit of the wheels B being adjusted further forward or backward, to keep the machine in a proper equipoised state, as set forth.

Second, the plough beams G G, provided at their front ends with upright bars *g* connected by joints *h* to the castings E, and provided at their back ends with upright bars H, having each a notch *i* to receive a catch I, all arranged substantially as and for the purpose set forth.

Third, the springs K on the back part of the framing A, in combination with the upright bars H of the plough beams G G, as and for the purpose specified.

Fourth, the attaching of the plough beams L L by means of the uprights M and joints *j* to the pivoted plate N arranged on the framing A, substantially as shown, to admit of the working or moving of the ploughs Q, as set forth.

No. 45,834.—JOEL F. KEELER, Pittsburg, Penn.—*Mode of constructing Railroad Car-Trusses.*—January 10, 1865.—This invention consists in constructing the bottom or truss of a railroad car of sheet iron, with suitable bulk-heads connecting it with the trucks or running gear in such manner that the said bottom or truss will drop partly below the top of the wheels and between them, more especially at the middle of the car, thus affording space for holding a sufficient amount of liquids to nearly or quite freight the car, while about the usual space is left in the car for other articles above the truss.

Claim.—The railway car-truss, constructed and used substantially in the manner and for the purposes set forth.

No. 45,835.—GEORGE A. KEENE, Newburyport, Mass.—*Feathering Paddle-wheel.*—January 10, 1865.—The floats of this wheel turn on the spokes or radii of the wheel. There is a difference in the area or surface of the floats on the sides divided by their axis of motion, and hence are made to feather.

Claim.—Arranging the floats of a paddle-wheel in pairs at right angles to each other, one at each end of a shaft passing through the centre of the wheel, so as to present more area on one side of said shaft than on the other, in order that the one float, entering the water flatwise, in passing through the same shall gradually turn and emerge edgewise, while at the same time it is turning the opposite float so that it shall enter the water flatwise, substantially as described.

No. 45,836.—THOMAS KENNEDY, Branford, Conn.—*Securing the Necks to Door Knobs.*—January 10, 1865.—The knob, as is usual, has a cylindrical hole for the reception of the eye of the shank, but in this instance there are, on opposite sides of the hole, two narrow grooves which extend down to its bottom, and at the bottom of the hole these two grooves are intersected at right angles by a circular groove of the same width and depth. The eye of the shank has two spurs at its end corresponding to the two side grooves, and after the soft cement has been introduced into the hole, the eye is thrust in and down to the bottom of the hole and then turned partly around so that the two spurs shall lie in the concentric groove.

Claim.—Securing the neck to knobs substantially as and for the purpose herein set forth.

No. 45,837.—JOHN J. KIMBALL, Napierville, Ill.—*Treadles for operating Machinery.*—January 10, 1865.—This invention consists in constructing a treadle in such a manner that the weight of the operator will aid in operating it.

Claim.—The treadle D, hung centrally on a shaft *a*, provided with two pitmen C C, which are connected to reverse cranks B B on the shaft A, in combination with the foot piece E E, hung on shafts *b b*, which are fitted in the treadle, and all arranged to operate substantially as and for the purpose specified.

No. 45,838.—JAMES KLINE and VROOMAN BECKER, Chicago, Ill.—*Swinging Gear for Threshing Machine.*—January 10, 1865.—This invention relates to a method of communicating power to a threshing machine in such a manner that the machine may be moved as the wind changes, while the power remains stationary. It consists in the combination of a stationary hanger, two sleeves and a socket, and a movable hanger or stirrup, connected to the machine by a perforated adjustable plate.

Claim.—The combination of a stationary hanger with two sleeves and a socket, and a movable hanger or stirrup, with a perforated plate attached, and the hook, all combined and operating substantially as described.

No. 45,839.—DAVID LAKE, Smith's Landing, New Jersey.—*Fly Traps.*—January 10, 1865.—An angular wheel carrying the bait is made to revolve by clock work or other well known means, the bottom part always being in contact with the bait supply. A perforated hood covers about one quarter of the top and front of the wheel, and an insect passing under it on the wheel cannot get back. The lower front part of the wheel has a hinged lid or scraper always bearing against it, so that there can be no escape in that direction. An opening, however, is provided for the insect to pass into a front lighted box, which can be removed when desirable to destroy the swarm.

Claim.—First, the angular wheel A *a'*, operating in connection with the cap D, and passage E, to conduct the flies in an undisturbed manner, to a point from which it will be impossible for them to regain their freedom, substantially as set forth.

Second, in combination with the aforesaid angular wheel, the circular trough G, adapted by its form to be readily inserted and removed, in the manner and for the purpose described.

Third, in combination with the said angular wheel, the pivoted gate H, weighted as and for the purpose described, and employed to cause the flies to leave the wheel A, and enter the receiver F, in the manner explained.

No. 45,840.—JAMES A. MACKEE, Boston, Mass.—*Dress Facing.*—January 10, 1865.—The facing consists of a strip of water-proof material and a strip of linen or other suitable cloth, sewed together at the edge, a piece of braid being sewed on the lower edge of the water-proof cloth which is first stitched to the hem of the skirt, the upper edge of the linen or other band being stitched to the dress a few inches above. The purpose is to protect the dress from the pucker and strain effected by a water-proof material sewed directly to it.

Claim —The new manufacture or combination dress facing, as composed of the water-proof or enamelled cloth band, and the flexible linen band, or its equivalent, arranged and connected together in manner and to be used substantially as specified.

No. 45,841.—HOSEA LOW, Waukon, Iowa.—*Machine for cutting Sheet Metal.*—January 10, 1865.—This invention is intended for cutting sheets of metal at the proper angle at the sides and curve at the ends, to adapt them to the manufacture of pans, &c., and to cut out the circular pieces for the bottoms of the same. It cannot be intelligibly described in the space of a brief without reference to the drawings.

Claim.—First, the employment or use in machines for cutting sheet metal of two sets of cutters F F', arranged in one and the same oscillating frame E, or in two frames, the open ends of which point in the same direction, substantially as and for the purpose set forth.

Second, the combination of the cutter frame E, with the slotted shaft *a*, substantially as described, so that said frame can be lengthened and shortened from the centre.

Third, the combination of the central shaft *a* with the adjustable U-shaped standard D, and cutter frame E, and clamps H, substantially as set forth, so that the centre around which the cutters turn can be brought in any desired position in relation to the clamps.

Fourth, the radial sliding arms K K, applied in combination with the carriages I I, movable centre *a*, and cutter frame E, in the manner and for the purpose substantially as set forth.

Fifth, the employment or use of a slide M, carrying a pair of circular cutters *i*, and moving in rectilinear guides, substantially as described, for the purpose of cutting off bevels, as for squaring plates of sheet metal.

Sixth, the gauges L, applied in combination with the clamps H, substantially as described, and acting in the double capacity of gauges and of eccentric cams for compressing the clamps.

Seventh, the employment of the adjustable plate-holder N, in combination with the cutters F F', and cutter frame E, constructed and operating substantially as and for the purpose set forth.

No. 45,842.—JOHN B. MAHANA, Benson, Vt.—*Automatic Folding Gate.*—January 10, 1865.—This gate consists of bottom and top rails connected by pivoted slats. The centre pin of the hinges is placed in a horizontal position, and the upper hinge set further back upon the post than the lower one, so that the gate can be brought to a vertical position. By the operation of two cams and rods connecting with levers or bars, over which the wheels of the carriage pass on approaching the gate, the gate is thrown open, and a like operation closes the gate behind the carriage.

Claim.—First, the combination of the folding or rising and falling gate with the trippers D, for opening and closing the gate by the action of the wagon or other wheel in passing the gate, substantially in the manner and for the purposes set forth.

Second, the peculiar arrangement of eccentrics I, wires L, cords G G', and pulley H, for opening and closing the gate, substantially as described.

No. 45,843.—JOHN A. MASON, Brooklyn, New York.—*Ladies' Breast Pads.*—January 10, 1865.—The frame of this pad consists of a helical spring, the lowest coil or base of which is the base of the frame, the end of the wire being soldered to the side of this lowest coil at such point as may be selected with reference to the diameter of the pad. The spring is tied down to be covered within and without, each cover being secured around the base coil, the interior cover or lining being attached to the spring at the centre. When the cord holding the spring down is severed the pad assumes a dome-like form.

Claim.—The breast pads, constructed with the parts A, B, and C, substantially as above described.

No. 45,844.—JAMES A. MCGILLIRAE, Dyer, Ind.—*Presses.*—January 10, 1865.—This invention relates to a press for baling purposes, and of that class which is provided with a beater for compacting in the press-box the material to be acted upon previous to the pressing operation.

The invention consists in a means for operating the beater, and also in an improvement in the beater itself, as well as in the means employed for pressing the article after the beating operation has been performed.

Claim.—First, the employment or use of a cast-metal beater I, provided with holes *b*, to admit of the escape of air from the press-box, substantially as set forth.

Second, the trip wheel N, constructed and arranged substantially as shown, for operating the beater I, in combination with toothed wheels O and P, as described.

Third, the two levers E E, in combination with the inclined planes H H, for operating the follower F, substantially as set forth.

No. 45,845.—HARRISON B. MEECH, Fort Edward, N. Y.—*Rotary Boilers for the manufacture of Paper Pulp.*—January 10, 1865.—This invention consists in an improved arrangement of the pipes for introducing and withdrawing liquids from the boiler, and in an arrangement of the steam pipes so that they will not be clogged up by the pulp.

Claim.—First, the combination of the pipes *b' c c'* and *d'*, with their respective stop-cocks P N and O, with the pipe *a* C entering into the rotary Y Y, in the manner and for the purposes above described.

Second, the perforated cap B, in combination with the steam pipe A *a a*, passing out of the rotary through its journals *a'*, in the manner and for the purpose above described.

Third, the combination of the pipe A *a a*, the steam chamber K, the pipe *g'*, and the stop-cock M, in the manner and for the purpose above described.

No. 45,846.—JOHN M. MERRYMON, Indianapolis, Ind.—*Manufacture of Prussian Blue.*—January 10, 1865.—This invention consists in preparing Prussian blue by mixing a solution of prussiate of potash with a solution of bichromate of potash, and after stirring well, adding to it a solution of sulphate of iron until the proper color is produced. The color is then deepened by adding more of the solution of bichromate of potash, and sulphuric acid added to neutralize any potash remaining in solution. The Prussian blue can also be prepared by adding to a solution of prussiate of potash a solution of acetate of lead and a solution of bichromate of potash, and then adding the mixed solutions to a solution of sulphate of iron.

Claim.—The use of a solution of bichromate of potash and a solution of acetate of lead, in the manner and for the purposes herein described.

No. 45,847.—HENRY J. MILLER, Shanesville, Ohio.—*Sawing Machines.*—January 10, 1865.—The object of this invention is to saw wood transversely, and it consists in the combination of the driving shaft, on which is a spur-gear wheel working in a pinion that turns the crank shaft, with the pitman attached to the same, working between two suspended cross-head guides, that can be adjusted perpendicularly by means of a shaft having pinions gearing into upright racks that support and adjust the guides.

Claim.—The combination of the shaft J, pinions *h i*, suspending racks H I, hangers D E, slideways *b c*, guides *d e*, cross-heads *l m*, and horizontal saw A, all arranged to operate as herein specified.

No. 45,848.—EDMUND MORRIS, Burlington, N. J.—*Fruit Box.*—January 10, 1865.—This invention consists in the construction of fruit boxes of thin veneer or any suitable kind of wood, pasteboard, or other material, and by means of a punch of proper size to cut out at one blow a strip long enough to form the four sides of the intended box, with a tongue at one end, which is fitted into a loop formed in one side of the box.

Claim.—The above described method of constructing fruit boxes without the use of nails or glue, whether made of wood or other material, and of whatever shape.

No. 45,849.—GEORGE M. MOWBRAY, Titusville, Penn.—*Ejectors for Oil Wells.*—January 10, 1865.—The object of this invention is to so arrange a series of devices that an eduction or blast pipe connected with an ejector of an oil well may be suspended, raised, lowered, or rotated at pleasure, whereby to correct the relative relations of the blast pipe with the eduction pipe, so as to deliver the blast of compressed air in such volume and at the precise distance which will produce the most effective result.

Its novelty consists in the frame constructed with one or more stuffing boxes to receive the tube connecting with the blast pipe; the collar *a* upon the tube A, screw B in combination with the female screw plate C and tube A, the hollow cap G in combination with the blast tube A, the combination of a T with the cap G, stuffing box D, and lugs to receive bolts *c c*.

Claim.—First, the frame constructed substantially as described, with one or more stuffing boxes to receive the tube connecting with the blast pipes, substantially as described and for the purposes set forth.

Second, the collar *a* forged upon or otherwise secured to the tube A, in combination with the hollow sleeve screw B, for the adjustment of the tube A, substantially as described and for the purposes herein specified.

Third, the hollow screw B and templet female screw plate C in combination with the tube A, substantially as and for the purposes described.

Fourth, the hollow cap G in combination with the blast tube A, substantially as described and for the purposes explained.

Fifth, the combination of a T fitted with a cap G, stuffing box D, and lugs to receive bolts *c c*, with templet and hollow screw, substantially as described and for the purposes set forth.

No. 45,850.—William S. Nicholson, Providence, R. I.—*Machine for Forging File Blanks.*—January 10, 1865.—In this device the hammers or dies, four in number, are attached, with their faces towards each other, to the short arms of horizontal levers fulcrumed on the inside, each one respectively on the bottom, top, and two sides of a movable frame, and are operated by cams of suitable shape revolving on a horizontal shaft between their longer arms, which cause the hammers to give a succession of blows, while at the same time they are made to pass from heel to point of the file blank by a feed screw operated by a ratchet wheel and pawl, the movement of the latter being regulated to suit the amount of work to be done upon the different parts of the blank to be forged, which latter meanwhile remains stationary.

Claim.—First, swaging and shaping a file blank or similar article by the method and on the principle substantially as described.

Second, the method, substantially as described, of regulating and varying the rate of speed at which the devices for swaging the metal shall travel, by means of an irregular surface K moving with the swages, in combination with the mechanism by which such swages are moved, as herein specified.

No. 45,851.—A. B. Nimbs, Buffalo, N. Y.—*Elevators.*—January 10, 1865.—The nature of this invention relates to the construction of an elevator leg of wrought iron, the skeleton of the leg being formed of eight angle bars placed one at each corner of the back and front trunks, said angle bars being connected together by diagonal braces of flat bar iron, or by continuous plates of sheet iron, or both, riveted or bolted thereto, for the purpose of giving great strength and stiffness to the leg.

Claim.—A wrought-iron elevator leg, constructed of wrought-iron angle bars C, and connected and strengthened by wrought-iron diagonal braces D, or by sheet-iron plates L, the two trunks of the leg being connected at the top by the semicircular arches *c2 c3*, and at the bottom by the cast-iron foot box A, substantially as described.

No. 45,852.—Joseph W. Norcross, Middletown, Conn.—*Wire Fence.*—January 10, 1865.—This invention consists in a wire fence in which each section is constructed of one or more continuous pieces of wire extending over four sets of pulleys, two of which sets have their bearings on the end posts of the section, and the other two sets on adjustable posts in the middle, in such a manner that by moving said adjustable posts towards or from each other the tension of the wire is decreased or increased, and can thus be readily accommodated to the existing temperature; and furthermore, by using a continuous piece of wire the liability of the wire to break is materially reduced. The several strands of wire are supported and held parallel by brackets with oblique slots, cast or otherwise, rigidly attached to posts, which may be loose or fastened down to the ground. Before the wires are strained they can be easily introduced into the brackets, and by moving the movable posts an opportunity is obtained to force the wires apart when a person desires to pass through between them. The bearings of the pulleys are cast solid with the posts, so that the fence can be made cheap and durable.

Claim.—First, the use in the construction of a wire fence of one continuous piece of wire for each section, substantially as and for the purposes set forth.

Second, the pulleys *a b c d* attached to rigid posts *c c'*, and to movable posts D D', and operating in combination with the wire W and with the right and left handed screws or their equivalents, substantially as and for the purpose described.

Third, the brackets *g'*, with oblique slots *h*, applied to movable or rigid posts E, and operating in combination with the wire W, substantially as and for the purpose set forth.

Fourth, casting the bearings of the pulleys *a b c d* solid with the posts C C' D D', substantially as and for the purpose described.

No. 45,853.—G. H. NYE, Monmouth, Ill.—*Preparing Hay for Baling.*—January 10, 1865.—This invention consists in providing each end of each roller with flanges to confine the hay within the limits of the pressing surface.

Claim.—First, the rollers B C, when provided with flanges *c c*, substantially as and for the purpose herein specified.

Second, the combination of flanged crushing rollers B C, with the knives *g g*, substantially as and for the purpose set forth.

No. 45,854.—GEORGE PARR, Buffalo, N. Y.—*Manufacturing Screw-Drivers.*—January 10, 1865.—This invention consists in first rolling a sheet of steel of a width equal to the length of the screw-drivers to be cut from it, and somewhat thicker in the centre than upon either edge, and then cutting the screw-drivers from said plate by means of dies.

Claim.—Manufacturing screw-driver blanks or blades and other similar tools by the process substantially as herein described.

No. 45,855.—GEORGE T. PARRY and WILLIAM S. WARNER, Philadelphia, Penn.—*Method of Preventing Oil Barrels, &c., from Leaking.*—January 10, 1865.—This invention consists in saturating the staves of the barrels with paraffine by placing them in an air-tight vessel, exhausting the air, and then allowing the paraffine, in a fluid state, to flow in.

Claim.—The employment of paraffine to prevent leakage from barrels and other vessels of wood.

No. 45,856.—TOWNSEND POORE, Scranton, Penn.—*Water Gauges for Steam Generators.*—January 10, 1865.—The object of this invention is to so arrange its details that the height of water in a steam generator may at all times be manifested, whereby the danger of explosion may, to a considerable extent, be averted. Its novelty consists in the combination and arrangement of the cock, plug, tail stock, pipe, index hand, perforated vessel, and the cup of the discharge pipe.

Claim.—First, the arrangement, consisting of the cock F, plug G *c*, flanged tail stock C, segment pipe D, and index hand *g*, the whole being combined and fitted to the boiler substantially as and for the purposes herein described.

Second, so fitting the several parts of the apparatus together and to the boiler that the one plug G *c* answers the two-fold purpose of opening or closing the cock F, and of twining the segment pipe C D to any position desired, in the manner herein described.

Third, the application of a hollow perforated vessel H to the hollow drain-pipe of a try-cock, substantially as described.

Fourth, the application of a cup K to the inner end of the discharge pipe D, for determining the height of water in the boiler when there is no pressure therein, substantially as described.

No. 45,857.—HENRY PREUSS, New York, N. Y.—*Composition for Lining Barrels, &c.*—January 10, 1865.—This invention consists of a composition of glue, alum, litharge, and chloride of lime. The glue is first dissolved in water, and the solution heated to near the boiling point; the alum is then added in small pieces, and the mixture well stirred: the litharge is then dissolved in water and added to the mixture, the whole being continually stirred to prevent the litharge from sinking to the bottom.

Claim.—A composition produced by combining litharge with glue, or its equivalent, with or without other materials, for lining barrels or other packages of oil.

No. 45,858.—FITCH RAYMOND and AUGUST MILLER, Cleveland, Ohio.—*Fence Gates.*—January 10, 1865.—In this invention a grooved wheel is attached to the hinged end of the gate in such a manner that the centre of the wheel is perpendicular to the hinges of the gate. The wheel is placed in a horizontal position, and encircles the gate post to which the hinges are attached. A weight is suspended from the edge of the wheel furthest from the gate by means of a cord, which is supported on each side by a pulley. In opening the gate in either direction the weight is raised, the gravity of which will close the gate when the force which opened it is removed.

Claim.—The arrangement of the ring or hoop D, with the groove *f* and gate A, in combination with the rollers *e e*, cord *d*, and weight, when operating conjointly as and for the purpose set forth.

No. 45,859.—OLIVER P. REEVE, Tipton, Iowa.—*Beehives.*—January 10, 1865.—This invention relates to the construction and arrangement of several parts of the hive identified by the claim.

Claim.—The arrangement of the comb frame and comb guides, constructed as described, in combination with the groove *i* in the side of the hive and the double inclined bottom, substantially as and for the purposes specified.

No. 45,860.—CYRUS ROBERTS, Three Rivers, Mich.—*Cultivator.*—January 10, 1865.—The main frame, shifting plough frame, lifting lever, shifting mechanism, and driver's seat are so combined that the driver when on his seat can raise or lower the ploughs, or shift them,

laterally, without releasing his grasp upon the reins. With the shifting frame is combined a foot lever acting like a tiller, to enable the driver to shift the ploughs. The main frame, shifting frame, ploughs, and corn guard are so combined that they all vibrate on a common centre between the wheels.

Claim.—First, the combination of the main frame, the shifting plough frame, the lifting lever, and the shifting machine arm O P, with the driver's seat, when arranged for joint operation as described.

Second, the shifting foot lever R, constructed and arranged to operate as and for the purposes described.

Third, the combination of the shifting frame, the ploughs, and the corn guard with the main frame when constructed and arranged in operating as described for the purposes set forth.

No. 45,861.—CYRUS ROBERTS, Three Rivers, Mich.—*Cultivator.*—January 10, 1865.—The shovels are attached to their stocks by means of swivelling brackets, in order that they may be adjusted at various angles to throw earth upon or away from the crop. The shovel stocks are attached to the frame by means of brackets, pins or bolts, and clips, so as to secure a strong and yet free attachment. The shovels are mounted in pairs in an auxiliary frame arranged above the axles, and having both a vertical and lateral movement, the ploughs being all hinged on a common centre and playing between the wheels. The brackets to which the shovel stocks are pivoted are connected with the shifting frames by set screws and slots, so that the distance between each pair of shovels may be varied without changing the other parts of the mechanism.

Claim.—First, the combination of the double-ended shovels with their stocks, by means of the reversible swivelling brackets *e*, and bolts *c*, in the manner described, for the purpose of reversing the shovels when worn or injured, and of turning them sidewise to throw the earth more or less towards or from the plants as desired.

Second, the combination of the shovel stocks and shifting frame by means of the brackets J, bolts *j*3, and clips *j*4, as described, for purposes set forth.

Third, the combination of the shovels, the auxiliary or shifting frame, and the main frame, when constructed and arranged as described, for the purposes set forth.

Fourth, the combination of the plough stocks and shifting frame by means of the brackets J, slots *j'*, and set screw *j*, as and for the purposes described.

No. 45,862.—H. C. ROBINSON, Monmouth, Ill.—*Feeding Corn to Corn Shellers.*—January 10, 1865.—This invention consists of a bin containing compartments, with the bottom inclined to the centre, underneath which is an endless belt that carries the corn to the mouth or hopper of the corn sheller.

Claim.—The employment or use of an endless apron or carrier in connection with a crib or corn receptacle, provided with removable slats or boards *d*, at its bottom, substantially as and for the purpose herein set forth.

Also, a crib or corn receptacle divided into a series of compartments and provided with a well hole, arranged as shown, when used in connection with the endless apron or carrier and the removable slats, substantially as described.

Also, the arrangement of the endless apron or carrier E, with the bottom *i*, of the box F, and the spout G, for the purpose of carrying off the loose or shelled corn as set forth.

No. 45,863.—CHARLES H. ROBINSON, Bath, Me.—*Baling Press.*—January 10, 1865.—This invention consists in an arrangement of levers, arms, and a windlass, whereby a very simple and efficient means is obtained for operating the follower of a press box, and one which will work with little friction.

Claim.—The combination of the levers C, bars D, ropes F, and shaft E, all arranged and applied to the follower B, to operate in the manner substantially as and for the purpose herein set forth.

No. 45,864.—CHARLES D. ROGERS, Utica, N. Y.—*Shifting Gear.*—January 10, 1865.—This invention relates to a means whereby the pinion which gears into the large spur wheel of reaping and mowing machines may be moved or adjusted so as to render the long or crank shaft, and consequently the sickle, operative and inoperative as desired. The object of the invention is to obtain a means which will operate without subjecting any of the working parts to undue strain, jars, or concussions, and one which will be self-locking and simple in its construction and arrangement.

Claim.—The lever I, with cam J attached, provided with two notches *f f'*, in combination with slide E, connected with the pinion C, and provided with the pin K and the sleeve H, provided with the pin K', and arranged with the spiral spring G, all arranged to operate in the manner substantially as and for the purpose specified.

Also, the lever I and cam J, in combination with the slide E, provided with two pins K K', either or both being fixed or movable, when said pins are arranged so as to engage with or lock into the notches *f f'*, as set forth.

Also, the flange L, provided with the slot *i*, when arranged in relation with the box M, substantially as and for the purpose specified.

No. 45,865.—SEYMOUR ROGERS, Pittsburg, Penn.—*Loading and Unloading Hay Wagons, &c.*—January 10, 1865.—This invention has for its object facility in loading and unloading hay, &c., and also securing the load upon the wagon. This is attained by making the upright at the rear end of the wagon jointed, and attaching to it an arm by means of a joint, so that the upright and its arm may be folded over the load and secured by a rope or chain at the rear end of the wagon.

Claim.—The turning upright B, placed at the rear part of the wagon and composed of two parts *a b*, connected by a joint in combination with the windlass E, arm D and rope or chain F, all arranged to operate substantially as and for the purpose herein set forth.

Also, the same device for binding hay on the wagon, in combination with windlass H.

No. 45,866.—E. H. SAWYERS, Orleans, Iowa.—*Cultivators.*—January 10, 1865.—This invention consists in the arrangement of a lever and slot to communicate a side motion to the cultivator. By means of an angular shaft and rod, the draught is transmitted to the rear and heavier part of the machine.

Claim.—First, in combination with the lever L′ and shaft L, the oblong slot *i*, formed and employed in the manner and for the purpose specified.

Second, the described arrangement of the adjustable cultivator frame I I′, I2 I3, the brace rods *h*, angular shaft M and draught rod N, the whole being employed in the manner and for the purposes set forth.

No. 45,867.—AUGUSTUS W. SCHARIT, St. Louis, Mo.—*Device for Producing Motive Power by the vertical rise and fall of the Tide.*—January 10, 1865.—This invention consists in the combination of a float, with a screw and valves for filling the float with water. The float consists of a rectangular box made water-tight, and provided with valves for the admission of water when the float has reached its highest point. To the float a nut is attached which works upon the screw, and imparts thereto a rotary motion which is communicated to the machinery to be driven by means of bevel gears, one of which is attached to the top of the screw. A continuous motion in one direction is secured by a ratchet and pawl, which are attached to the horizontal shaft that is placed directly over the centre of the screw. Modifications of this device have double racks working in pinions for communicating power and a single rack for the same purpose, and another with ropes or chains working on pulleys.

Claim.—First, the combination of a float, screw shaft and the valve or valves for fitting and emptying the same, substantially as shown and described.

Second, the combination of a float with the double rack for communicating the power, substantially as shown and described.

Third, the combination of a float with the single movable rack for communicating power, substantially as shown and described.

Fourth, the double-sided valves substantially as shown and described.

Fifth, the combination of the screw cog-wheels, ratchets, and pawls, substantially as shown and described.

Sixth, the combination of the single rack and double ratchets and pawls, substantially as shown and described.

Seventh, the arrangement of the double or twin pairs of ratchets and pawls, substantially as shown and described.

Eighth, the combination of the double rack and wheels with the lever and screw and slotted rod and screw attached to frame guide, substantially as shown and described.

Ninth, the endless-chain pulley, drum, or windlass, in combination with the endless band or chain rods, hooks, pulleys, beam, and hinged drop, substantially as shown and described for loading and unloading vessels and for other purposes.

No. 45,868.—R. SCHMITZ, Brooklyn, N. Y.—*Billiard Indicator.*—January 10, 1865.—The object of this invention is to protect the proprietors of billiard saloons, by compelling the players to complete each game without the power to prolong it, the indicators being so constructed as to forbid removal backwards.

Claim.—First, the notched shaft E, in combination with the slide C, cam rods *i i*, index *e*, and scale *a*, constructed and operating substantially as and for the purpose set forth.

Second, the cam rods *i i′*, in combination with the notched shaft E, slide C, and spring catch *f′*, constructed and operating in the manner and for the purpose substantially as described.

Third, the swinging bar *m* and cam *l*, in combination with the slide C and registering device *v u*, constructed and operating substantially as and for the purpose specified.

No. 45,869.—JOHN SHEFFIELD, Pultneyville, N. Y.—*Drills for Boring Wells.*—January 10, 1865.—This invention has for its object the construction of a drill that will be capable of enlarging the shaft of an artesian well at its bottom. The invention is more especially designed for enlarging the bottoms of oil wells, so as to open more veins than the ordinary shaft will intersect.

Claim.—A drill for artesian wells, composed of the chisel bars C D and bent or oblique arm B of the drill rod A, connected together by pivots, and arranged substantially as and for the purpose herein set forth.

No. 45,870.—S. T. SHELLEY, Louisville, Ky.—*Railroad Axle Boxes.*—January 10, 1865.—This invention consists in a new mode of fastening a cover to an axle box, by means of a cam-joint hinge and a reciprocating spring bolt, so that the cover is securely held by the spring, whether open or closed.

Claim.—First, hinging the covers of axle boxes by means of a cam-joint hinge, constructed substantially as described, working on a reciprocating spring bolt, or its equivalent.

Second, making an enlargement *e* in the hinge A, for receiving the bolt head and spring *f*, in combination with the reciprocating bolt C and hinge A, for the purpose of protecting the spring and bolt from dirt and other obstructions, substantially as described.

No. 45,871.—SIDNEY SKILLMAN, Jersey City, N. J.—*Railroad Cars.*—January 10, 1865.—The object of this invention is to enable the engine and boiler of a locomotive car to be disconnected and run out therefrom whenever it becomes necessary so to do. This object is accomplished by having the engine and boiler independent of the car body, and attached to a truck. The invention consists in a novel construction of the car body, whereby, with a suitable arrangement of the engine and boiler upon the truck, the disconnection and running away of the truck, engine, and boiler from the car body are facilitated. It also consists in attaching the smoke pipe permanently to such a car, and making it detachable from the boiler, to facilitate the running out of the boiler from the car with the engine and truck.

Claim.—First, in combination with the placing of the boiler and engine of a locomotive car on a truck in such manner that the boiler is received within a compartment at one end of the car, the construction of the car with such an opening in the bottom or floor, and a door or other suitable opening in one end, as to permit the boiler to pass out with the truck when the latter is run out from under the car, substantially as herein described.

Second, the stationary platforms arranged within the car body and in relation to the boiler and truck D, substantially as herein described, to serve as standing places for the engineer, and as a protection against injury in case of getting off the track.

Third, in a locomotive car, having the engine and boiler detachable, attaching the smoke pipe permanently to the car, substantially as and for the purpose herein described.

No. 45,872.—C. V. STATLER, Wataga, Ill.—*Device for Shrinking Tire.*—January 10, 1865.—In this device the jaws are supported in upright standards, one of which is pivoted at the middle in a slot in one end of the frame, the other allowed to slide horizontally in a similar slot at the other end, both being connected by bars at the lower ends. By this arrangement, operating a cam behind the sliding standard forces it inward, while the connecting bars, moving therewith, operate the lower end of the pivoted standard, and cause the two jaws to approach each other.

Claim.—Two bars B C, one, B, fitted in the bed A by a pivot bolt *c*, and the other, C, arranged so as to slide therein, and the two bars connected at their lower ends by one or more bars D, and provided above the bed with the dies *f f*, in combination with the clamps F F, pivoted to the bars B C, the spring E, and lever J, provided with the cam K, all arranged to operate in the manner substantially as and for the purpose set forth.

No. 45,873.—D. D. STELLE, New Brunswick, N. Y.—*Weighing Buckets.*—January 10, 1865; antedated November 14, 1862.—One or more weighing devices are combined with the bucket and bail, so that when the former is suspended from the latter the weight of its contents may be ascertained simply by observing the weighing attachments. The bottom of the bucket is provided with one or more curved springs and a spring stop, so that, by withdrawing the latter, the weight of the bucket's contents forces the bottom open and the contents are discharged, whereupon the spring closes the bottom again.

Claim.—First, the weighing attachment *b c*, or its equivalent, in combination with the bucket A and its bail B, constructed and operating substantially in the manner and for the purpose described.

Second, the arrangement of springs *i* and spring stop *g*, in combination with the hinged bottom D of the bucket A, as and for the purposes specified.

Third, the arrangement of the rings R and Q guiding the string P, as described within.

No. 45,874.—JUDD STEVENS, Marengo, N. Y.—*Sleds.*—January 10, 1865.—This invention relates to "bob-sleds," and consists in so connecting the two bobs that each can have a degree of independent action, adapting themselves to inequalities in the road. The invention is limited to a specific combination and arrangement.

Claim.—Connecting the bolster C with the way *a*, by means of the rounded bearing *c* fitting in the depression *b*, for the purpose of allowing a free turning or oscillating movement of the bob, and employing the friction rollers *d f* to obviate the friction in the end movement of the bob in adapting itself to an irregular surface, the whole arranged, combined, and operating substantially as herein set forth.

No. 45,875 —ROBERT STEWART, Fultonham, N. Y.—*Water Wheel.*—January 10, 1865.—The object of this invention is to cause the water to act both by impact or percussion and reaction, which is attained by a peculiar form of the buckets and their mode of attachment

to the wheel. The novelty consists in forming the buckets with their oblique and inclined surfaces attached to the case with the bands in connection with the scroll.

Claim.—The buckets *d*, having the vertical, transverse, oblique, and inclined surfaces *e f f*, and attached to the case *b*, with the bands *h h* encompassing the inclined surfaces *f f*, in connection with the scroll A, all arranged substantially as set forth.

No. 45,876.—IGNATIUS STOFFEL, Washington, D. C.—*Artificial Arms.*—January 10, 1865.—In this invention the object of the trigger used in connection with ratchet bar and trigger spring is to enable the arm to be bent without operating the fingers when either closed or open. By pressing down the trigger the forked lever is disengaged from the sliding rod, thus allowing the arm to be bent without operating the fingers. In case the fingers are closed, the pressure of the projection on the ratchet bar holds the fingers in a bent position.

Claim.—First, the peculiar construction of the artificial hand and wrist joint, the palmar region of which is represented by a hollow metallic case with an elastic palm; the phalanges *t t t t*, *t' t' t' t'*, and *t'' t'' t'' t''*, operated by the springs *p p p p*, representing the four tendons of the flexor profundus, and articulated by the guide rings *u u u u*, representing the tendinous bands at the corresponding places of the natural hand; also, the hinged thumb and the thumb lever *q*, representing the flexor brevis pollicis, in combination with the stirrup *l* and the spring *m*, by which arrangement the elasticity of the cartilages of the natural hand is secured, as described within.

Second, the peculiar construction of rod *i* and ratchet bar K, in combination with the fork lever *a* fastened to the elbow, and the construction and arrangement of the trigger *d* with catch *e* and trigger spring *f*, as specified and for the purpose set forth.

No. 45,877.—CHARLES H. STRATTON, Munroetown, Penn.—*Digging Machine.*—January 10, 1865.—This invention consists of a machine for spading the earth, with steam as a motor, which object is accomplished by the use of spades or forks, of any suitable or desired numbers, arranged in such a manner that, as the machine is drawn along, they will penetrate the earth and lift and turn over the same in a manner similar to that of hand digging.

Claim.—The employment or use, in a steam digging machine, of a series of spades arranged in such a manner as to penetrate the earth, rise or swing upward with their load, and then turn one-quarter of a revolution to discharge the same, substantially as herein shown and described.

Also, the slots *g* in the shafts F F, having spiral outer ends *h*, in connection with pins *i'*, fitted in the bearings *e*, and passing into the slots *g*, the shaft G, to which the bearings *e* are attached, and the crank shaft B, all being arranged to operate the spades E E', as set forth.

No. 45,878.—WILLIAM A. SWEET, Syracuse, N. Y.—*Ovens for Converting Iron into Steel.*—January 10, 1865.—This invention consists of a converting chamber, the sides of which are of a thickness of one width of fire-brick, the bottom of the chamber being formed of fire-bricks set on edge, or of two thicknesses of fire-brick. The bottom rests upon two thicknesses of fire-brick laid in such a manner that openings will be left between the chamber and its foundation. The furnaces and grates extend along each side of the base of the converting chamber, and from end to end of the oven, leaving an opening at each end for the admission of fuel. A longitudinal line of fire-brick prevents the draught from passing from one furnace to the other. The outer walls of the furnace are made perpendicular from the base to the boshes, the boshes being on a level with the spaces, and designed to project the heat into them. Above the boshes the walls are made to incline inwards in order to confine the heat more closely to the sides of the converting chamber. At the top the spaces communicate with the interior of the converting chamber by means of holes which are made smaller towards the centre of the chamber than at the ends. The interior of the fire chamber is connected with a flue by means of passages, which are also made smaller at the centre of the chamber near the flue than at the ends.

Claim.—First, the combination and arrangement of the heating furnaces with the converting chamber A, substantially as described.

Second, the dead-holes H, in combination with the heating furnaces and chamber A.

Third, the boshes or angular projections *m m*, as related to the bottom of the chamber A and the dead-holes H.

Fourth, gradually diminishing the fire spaces S S from the boshes *m m*, to the openings *o o o* at the top of the chamber A.

Fifth, the openings *o o o o o*, *p p p p*, substantially as described and for the purposes set forth.

Sixth, supporting the upper edges of the chamber wall from external pressure, substantially as described and for the purposes set forth.

No. 45,879.—GEORGE B. TAYLOR, Worcester, Mass.—*Manufacturing Cutter-bars for Harvesting Machines*—January 10, 1865.—The pattern bar in this apparatus corresponds, in its general form and dimension, as also in an eye formed upon one of its ends, to the cutter bar, but has projecting upwards, near one edge, a series of teeth, separated from each other by spaces equal to the spaces which should separate the holes in the cutter-bar, and has attached to it, near the end opposite to that on which the eye is formed, a loop or stirrup for

confining one end of the cutter-bar. In practice, the tapered extremity of the bar to be punched is passed through the loop, its edge abutting against the edge of the pattern, and is driven endwise until the eyes of the cutter-bar and pattern come in line with each other, when a bolt is passed through said eyes, and the two bars are thus, at that end, held immovably fixed to each other. Thus united, they are placed upon the table of the punching machine, a pawl depending from a stud on an adjacent part of the frame taking into the rack determines the distance which the bars must be moved upon the table for each successive hole. The series of holes are punched one after the other, beginning with the one nearest the eye, so that the elongation of the bar due to the operation of punching will be in the direction of the free end of the cutter-bar.

Claim.—Forming the holes for the rivets or bolts, by which the cutters are fastened to the cutter-bars in reaping and mowing machines by punching, in combination with holding the cutter-bar during the operation, so that it cannot elongate in the direction of the heel of the bar, for the purposes herein set forth.

Also, the use of the combined pattern and supporting bar B, as shown and described, to aid in the operation of punching cutter-bars, substantially in the manner herein described.

Also, in combination with the pattern or supporting bar B, the bolt *d*, and stay clamps C, for holding the cutter-bar, substantially as herein set forth.

No. 45,880.—SAMUEL E. TOMPKINS, Newark, N. J.—*Harness Saddle-trees.*—January 10, 1865.—This invention relates to harness saddle-trees made of iron and provided with iron jockeys, and consists in doing away with nuts and other projections on the under side of the tree, and in having the bearings of the tree so constructed that they serve the double function of bearings and clamps.

Claim.—The two bearings A A, connected together by a thin strip or plate B, made of convex form at their under sides to correspond to the shape of the back of the animal, and having a corresponding concave surface at their upper sides, when said bearings thus formed and connected together are provided with nuts *a* at their upper surfaces to receive the turret screws *b*, and all used in connection with the metal jockeys E E, flaps C, and back-board F, substantially as herein set forth.

No. 45,881.—GEORGE VANDER HEYDEN. Troy, N. Y.—*Stove Grate.*—January 10, 1865.—In this invention a rectangular cast-iron grate is made to rest on a bed plate of the same shape and material in such a manner that it is susceptible of a horizontal reciprocal motion to free it from ashes, &c., and also of a rotary motion when it becomes desirable to dump the grate, or empty its contents; in order to attain these movements with more ease and convenience, a shaker handle of peculiar construction is provided. The grate is also lined with fire-brick, which is kept in place by a mortise and tenon joint.

Claim.—First, the bed plate B when constructed respectively at each end of said plate, with the direct bearings *a a* and reverse bearings *b b*, in the manner substantially as herein shown, for the purpose of supporting and operating stove grates, in the manner herein set forth.

Second, in combination with the bed plate B the fire grate C, when constructed substantially in the manner as herein described and shown, so that the said grate can be operated in combination with said bed plate, fully in the manner and for the purposes as herein specified.

No. 45,882.—NATHAN VARS, New Market, N. J.—*Side-hill Ploughs.*—January 10, 1865.—This invention consists in attaching a subsoil share to the rear of a side-hill plough; this share is attached to a reversible standard and admits of adjustment to either side of the plough-beam. The depth of the subsoil share is varied by a slot and set-screw in the standard.

Claim.—The employment or use in a side-hill plough of a subsoil share G, having its standard F attached to an adjustable or swinging arm G*, arranged substantially as shown, to admit of the subsoil share being adjusted to either side of the plough-beam, to suit the position of the mouldboard C and share D, as set forth.

No. 45,883.—GEORGE W. WALKER, Boston, Mass.—*Stove Grate.*—January 10, 1865.—This invention consists of a rectangular grate, susceptible of a lateral reciprocating movement, and can also be dumped to clear out the ashes, being hinged at its rear part for that purpose. A shaker handle of peculiar construction is fitted to the front part, by which the grate is shaken; it also serves to hold the grate up in a horizontal position, and is withdrawn when it becomes necessary to dump the grate.

The last bar on each side of the grate is made so wide as to effectually prevent the cinders jamming the grate.

Claim.—A stove grate having capabilities both of horizontal reciprocation, and of vertical swinging movement, when the grate is hung at its rear side to allow these movements, substantially as set forth.

Also, in a grate so constructed, giving to each end bar of the grate such width and disposition that in its sliding movement under the stove lining, the capability of free movement of the grate is maintained, substantially as described.

No. 45,884.—SYLVENUS WALKER, Boston, Mass.—*Pen-holder.*—January 10, 1865; antedated September 11, 1863.—The pen-holder consists of a glass tube closed at one end and coated upon the inside with silver, so as to be a non-conductor of electricity, for the purpose of preventing that paralysis, nervousness, &c., which sometimes follows the use of steel pens with conducting handles.

Claim.—The hollow silvered glass pen-holder, sealed up and protected as and for the purposes set forth, as a new and highly ornamental manufacture.

No. 45,885.—SAMUEL JACOB WALLACE, Carthage, Ill.—*Grain Binder.*—January 10, 1865.—This invention relates to the manner of arranging the binding devices in connection with the movable arm which rakes or gathers the grain upon the platform into gavels, and to the means for imparting the necessary motions to said devices.

Claim.—First, the arm Z of wheel O, sliding over slot of wire holder Y, substantially as and for the purpose specified.

Second, the binder G in combination with a movable arm F, or other equivalent movable part, so that the binder may be made travelling in relation to platform A, substantially as and for the purpose specified.

Third, the combination of the rack K and twister I, substantially as and for the purpose specified.

Fourth, the rack K, arranged on frame Q, substantially as and for the purpose set forth.

Fifth, the compresser shoe V, arranged on frame Q, substantially as and for the purpose specified.

Sixth, the slotted wire holder Y, bent or recurved, substantially as and for the purpose specified.

No. 45,886.—HERVEY WATERS, Northbridge, Mass.—*Machine for Rolling Metals.*—January 10, 1865.—The weight of the journal boxes of the upper roller is in this machine sustained by two bolts, one to each, which are tapped into the journal boxes and ascend upward through the hollow adjusting screws, resting upon the upper end of the latter by virtue of a large square section or collar, and susceptible thereby of being turned by means of a wrench. From the upper surface of each of these square collars is projected a pin, and a bar with two holes in one side of it at the proper distance apart and corresponding in size to the pins rests upon said collars, and by means of the connections formed with it by the pins, prevents the standards in which the journals are placed from spreading apart; while from each end of the bar is suspended a stirrup which supports the roller by the two necks thereof.

Claim.—The arrangement of a single yoke with its appurtenances and connections, substantially as and for the purposes specified.

No. 45,887.—THEOS. WEAVER, Harrisburg, Penn.—*Adjustable Chair.*—January 10, 1865.—This invention consists of a stationary post or back, to which is hung the back and arms of the chair, and so arranged that the seat may be adjusted and the whole folded in a small compass.

Claim.—First, the construction of the arm frame C C F F′, and its combination with the haunch U, or with the haunch X and its collar K and pin, when so constructed as to enclose the back A and seat B, substantially as and for the purposes herein described.

Second, the combination and arrangement of the back A, which is provided with the arm rests D D, the tenons S S, the ratchets H, hooks and staples O O′, with the seat B, which is provided with the arm rests E E, the tenons bearing on R, the ratchets J, when operated by the haunch U or X, substantially in the manner as and for the purposes herein shown and described.

No. 45,888.—R. B. WILLIS, Rochester, N. Y.—*Thill Attachment.*—January 10, 1865.—This invention consists in providing the head of the thill iron with a recess opening into the hole through which the bolt passes, into which recess is placed a friction plate or key, which can be kept pressing the bolt by means of a set screw passing through the head of said iron; the object is to avoid the rattling of the thills.

The prominent feature of this invention is the location of the set screw operating against the front instead of the rear end of the thill iron.

Claim.—The combination and relative arrangement of the set screw *s*, frictional plate *a*, and the thill iron B, with the bolt *b* and jaws D of the clip, the parts being constructed as and for the purposes shown and described.

No. 45,889.—J. F. WILSON, Boston, Mass., and JAMES C. BARTLETT, Charlestown, Mass.—*Mode of Operating Switches.*—January 10, 1865.—This invention relates to a means for operating the switch rail of turn-outs in horse railroad tracks; the object being to dispense with the ordinary extra manual power required to adjust the switch rail by operating the same directly from the car.

Claim.—The employment of a shipping wedge connected with and operated at will from the car, and so as to enter between the switch and main rails of a track, substantially as set forth.

Also, the arrangement of the shipping wedges for moving the rail in opposite directions, as shown and described.

45,890.—Daniel Woodbury, Rochester, N. Y.—*Derrick and Horse Power.*—January 10, 1865.—This invention consists in the application to any portable horse power of side braces, for the purpose of relieving the wheels from lateral strains, and in the employment of angle irons to the angles of the frame under the driving shaft, which cause the frame to preserve its proper shape under any strain; also, in the application to the driving shaft of a windlass and vertical jack frame, having a pivoted head to which may be attached the arm of a derrick, thereby constituting a portable horse power and revolving derrick.

Claim.—First, the employment of side braces J, they being constructed, arranged and applied to mounted powers, substantially in the manner shown and described and for the purpose set forth.

Second, the peculiarly constructed stake iron P, in combination with the double brace bars J, for the purpose of holding the stake when driven more securely in position.

Third, attaching the inner end of the sweep brace I to the bracket R, or to the rim of the wheel W, as and for the purpose shown and described.

Fourth, the combination and arrangement of the angle iron D with the joint plate E and the frame A of this class of horse powers, as shown and described and for the purpose specified.

Fifth, fitting the box *v* between the jaws or wings *n* of the joint plate E, so as to have but a line of bearing vertically between the parts, as and for the purpose specified.

Sixth, the combination and arrangement of the rope spool or windlass, and the jack G, constructed as shown and described, with the mounted powers, as and for the purposes herein set forth.

No. 45,891.—A. R. Burdick, assignor to himself and J. D. Foster, Racine, Wis.—*Stake-holder for Railroad Cars.*—January 10, 1865.—The object of this invention is to obtain a stake-holder for sideless freight cars, which will allow its stake to be turned down in a horizontal position when required, so as to obviate the necessity of removing the stake from the car in loading.

Claim.—The box A, provided with the flange *d*, having a notch or recess *e* and two projections *f f*, one or both in combination with the collar C, provided with the flange *g*, internal elliptical opening and the projection *h*, all arranged substantially as and for the purpose herein set forth.

No. 45,892.—John Fowler, jr., Cornhill, England, assignor to W. P. Tatham, Philadelphia, Penn.—*Cultivating Land by Steam.*—January 10, 1865.—This invention consists in placing two engines at opposite head-lands, and by means of suitable gears, to which an endless rope is attached, and to which the ploughs are also attached, the ploughs are drawn alternately across the field.

Claim.—The combination herein described, whereby the power of two engines, situated on distant headlands, is simultaneously employed in giving motion to an agricultural implement by an endless rope, in manner substantially as described, to haul the agricultural implement alternately to and from each headland, as herein explained

No. 45,893.—George J. Hill, Buffalo, N. Y., assignor to H. G. Leisenring, Philadelphia, Penn.—*Hand Stamp.*—January 10, 1865.—This invention consists of a stamp inked by a ribbon, passing from one roller to another, and the claim is for a yoke which holds the die and type, and an elastic ring to support the bed.

Claim.—First, the yoke F, constructed and arranged in respect to plates E and G, substantially as specified.

Second, the bed, composed of the soft rubber ring I, metal plate J, and plate L, of harder rubber, leather, or other equivalent material, the whole being confined in a recess in a base plate B and arranged beneath the stamp, as described, for the purpose specified.

No. 45,894 —T. O. Washburn, assignor to himself and John C. Scott, Millville, Mass —*Calipers.*—January 10, 1865.—This invention consists in attaching to the calipers a slotted arc, graduated, one end being firmly fixed to one of the legs, the other furnished with a slot which plays over a pin in the other leg, and affixing at the axis of motion an index reaching down to the graduated portion of the slotted arc. As the calipers are opened and closed the index moves over the graduated arc and indicates the measurements.

Claim.—The index C and graduated plate D, when arranged and applied to the calipers, substantially as and for the purpose specified.

No. 45,895.—P. J. Boris, Halifax, Nova Scotia.—*Revolving Grate.*—January 10, 1865.—This invention consists in a grate attached to a back plate revolving in a chimney between two apartments, so that it can be adjusted in either; the two dampers in the flue, one on either side of the grate, are so acted on by an eccentric on the prolonged axis of the plate that the one over the grate is opened while the other is closed.

Claim.—The revolving grate D, arranged in the lower part of the flue or chimney A, in combination with the eccentric F, placed on the axis or shaft C of the plate B, and arranged relatively with the dampers E E, to operate automatically by the turning of the plate B and grate D, substantially as described and represented.

No. 45,896.—WILLIAM D. GRIMSHAW, Birmingham, England.—*Automatic Hammer.*—January 10, 1865.—This invention consists in providing a reservoir for air, which is within the framework of the hammer, and between the pump and the slide valve which admits it (the air) to the cylinder. The novelty further consists in providing and arranging two friction wheels in such a way that the valve is made to admit more or less air to the cylinder, according to the force required and the duty to be performed; the wheels are arranged one on the main shaft and movable longitudinally thereon, so that it may be placed near to the centre, or at any point between them and the periphery of the other wheel, which is placed on a vertical shaft, and to which the valve rod is attached. If the first-named wheel is near the centre of the last named little motion is imparted, and a light blow of the hammer is the consequence; but if it is carried nearer to the periphery the hammer is slower in its motion and a more forcible blow is given.

Claim.—First, the system of employing a reservoir between the pump or pumps and the hammer cylinder for holding the compressed air, the reservoir to be formed in the framework of the machine.

Second. The combination of the adjustable but otherwise stationary valve d' d', the slide valve k, the cylinder f, the piston g, the piston rod h, and the hammer i, substantially as set forth.

Third, the combination of the valve rod w, the friction wheel y, the sliding friction wheel b', and the shaft d, substantially as and to the effect herein above set forth.

Fourth, the combination of the reservoir b, the pump o, and the stop-cock t, as described.

Fifth, the arrangement described, of the pump o, reservoir b, friction wheels b' and y, valve rod w, valve k, cylinder f, and piston g, by which they are made to operate in relation to each other, substantially as set forth.

No. 45,897.—THOMAS SHORT, Fairmont, Ill.—*Gang Plough.*—January 10, 1865.—This invention consists in a rectangular frame, mounted on two wheels, with a crank shaft secured to the front end, and to which the plough frame is attached; it is raised and lowered by means of a lever, thus enabling the driver to give the ploughs a vertical movement: a lateral movement is communicated by a standard or handle rising from the plough frame.

Claim.—The arrangement of the double crank-shaped connecting rod G, devices e e, links a' a', beam E, lever H, and post I, the whole being employed for joint operation, in the manner and for the purpose specified.

No. 45,898.—HIRAM BERDAN, assignor to LEVI P. MORTEN, trustee of HIRAM BERDAN, ABIA A. SELOVER and WILLIAM B. BENSON, New York, N. Y.—*Rifling Breech-loading Fire-arms.*—January 10, 1865.—In this invention the novel feature consists in continuing the rifling behind the barrel proper, or through the counter bore on its rear, by means of which, having suitable fixed ammunition prepared, the projectiles will exactly fit the bore through which they are to pass with but little friction, and receive a motion of rotation according to the twist.

Claim.—The rifling or grooving of the counter bore of breech-loading fire-arms, substantially as and for the purposes herein shown and described.

No. 45,899.—HIRAM BERDAN, assignor to LEVI P. MORTEN, trustee of HIRAM BERDAN, ABIA A. SELOVER and WILLIAM B. BENSON, New York, N. Y.—*Breech-loading Fire-arm.*—January 10, 1865.—In this invention a hinged gate opening laterally serves as a breech block, against which the cartridge case abuts. It has a forward projecting lip to cover the front joint, and a projecting tail at the rear to cover the channel through which the cartridge is passed, securely keeping out the moisture. A ring extractor underneath is used to eject the cartridge shell.

Claim.—First, the projecting plate E, swinging in a plane transverse to the barrel, in combination with the ring G, substantially as and for the purposes set forth.

Second, the protecting cover I and protecting plate E, in combination with the latch D, as herein specified.

No. 45,900.—Cancelled.

No. 45,901.—HIRAM BERDAN, assignor to LEVI P. MORTEN, trustee of HIRAM BERDAN, ABIA A. SELOVER and WILLIAM B. BENSON, New York, N. Y.—*Attaching Bayonets to Fire-arms.*—January 10, 1865.—In this invention the shank of the bayonet is shorter than usual, and the holding stud, or end of the barrel, so located as to bring the blade directly over the ramrod, which is pushed up under the blade or shank, and thus the locking clasp or ring is better secured from disturbance.

Claim.—Placing the bayonet blade and shank upon the under side of the barrel, in combination with the ramrod, substantially as and for the purpose herein shown and described.

No. 45,902.—DAVID AHL, M. D., Newville, Penn.—*Method of Preventing Oil Barrels from Leaking.*—January 17, 1865.—This invention consists in saturating or coating the staves, or the barrels, with a composition made by combining shellac or other water-proof gum or resin with asphalt, coal tar, or other similar matter.

Claim.—The composition, as herein specified, for the purposes herein substantially set forth.

No. 45,903.—D. L. and J. M. BARLOW, Cohoctah, Mich.—*Harrow and Seeder.*—January 17, 1865.—This harrow may be attached to any wheeled carriage used in farming operations. By means of a pitman attached to an eccentric the harrow receives a reciprocating motion as it advances, which motion is regulated by a slotted platform, through which the harrow plays. By means of both its progressive and its lateral motion the harrow is enabled to pulverize the soil more completely than it could with only the former.

Claim.—First, the harrow *n*, constructed and operated substantially as herein described.

Second, the harrow *n*, in combination with the seeder B, the whole constructed and operated substantially as and for the purpose herein set forth.

No. 45,904.—WILLIAM BELBIN, Baltimore, Md.—*Oyster Dredges.*—January 17, 1865.—The front rods which support the rake or bar have an elbow or curvature at their lower end to serve as a shield, preventing the teeth from engaging in the side of the vessel or roller.

Claim.—The combination, in an oyster dredger, of the rake bar A, front rods C, and rear rods D, with the head E and swivelling link F when the rods C are curved, constructed and arranged as and for the purposes described.

No. 45,905.—J. W. BOPE, St. Louis, Mo.—*Harvester.*—January 17, 1865.—This invention consists in hinging the grain platform at its rear edge to adjustable arms, secured to the finger bar or to a rigid table connected therewith, the arrangement being such that the platform may be shortened or lengthened to suit the length of straw upon which the machine is operating; by raising the front of the platform, the completed gavel thereon is caused to slide off upon the ground, while at the same time the front edge of the platform acts as a cut-off to arrest the fall of the accumulating grain, until the gavel is discharged from the platform, when the platform drops, and the grain held up by its front edge falls thereon.

Claim.—The adjustable sliding platform or dropper hinged at or near its rear edge, as described, so that by the raising of the front edge it performs the two-fold function of the dropping gavel, and at the same time operating as a perfect cut-off to arrest the falling grain.

No. 45,906.—J. W. BOPE, St. Louis, Mo.—*Harvester.*—January 17, 1865.—This invention relates to the manner of discharging the grain from the platform upon which it falls as it is cut, and it consists in pivoting said platform, at or slightly in rear of its centre, to arms rigidly connected to and extending back from the finger bar, the platform being so pivoted to said arms as to vibrate about a fixed point thereon, and, by simply raising the forward edge, to slide the grain off upon the ground, said forward edge acting at the same time as a cut-off to arrest the accumulating grain and keep it separate from that which is being discharged.

It further consists in a specific arrangement of lever and cord for operating said platform, and in the arrangement in connection with the platform, of a shield to guard against obstructing matter, as straws, &c., getting under the platform when its forward edge is elevated, and preventing its operation.

Claim.—First, hinging the grain platform, which is arranged directly behind the cutting apparatus, at or near its centre, substantially as described, so that it will vibrate upon a fixed point, and by the elevation of its front edge perform the double function of discharging the completed gavel, and simultaneously therewith arresting upon its front edge the fall of the accumulating grain, as described.

Second, operating the tilting platform A by means of the lever D, with the chain or cord C, in the manner as and for the purposes herein described.

Third, the adjustable shield or guard E, arranged and operating in connection with the grain platform, as herein described, for the purposes set forth.

No. 45,907.—W. B. BURNETT, New York, N. Y., and JAMES P. MCINTOSH, Brooklyn, N. Y.—*Whitewash Brush.*—January 17, 1865.—This invention consists in connecting the handle with the brush-block, and is so arranged that the handle can be placed at any desired angle, by means of a ferrule and screw on the handle, and a slotted clamp on the brush.

Claim.—First, a brush-block in combination with a slotted way E, substantially as described.

Second, a slotted way E, in combination with a ferrule C, substantially as described.

Third, a brush with its handle applied thereto, when the several parts are constructed and operated substantially as described.

No. 45,908.—JOHN CHILCOTT, Brooklyn, N. Y.—*Gas or other Retorts.*—January 17, 1865.—This invention consists in surrounding the bottom, sides, and top of a gas or other retort with a jacket or casing C, between which and the retort a continuous system of flues is formed by longitudinal partitions, having openings at opposite ends alternately.

Claim.—First, surrounding the bottom, sides, and top of a gas or other retort with a jacket or casing C, between which and the retort a continuous system of flues E E is formed by means of longitudinal partitions, having openings at opposite ends alternately, whereby the flame is caused to circulate back and forth several times along, and once all around, the retort, substantially as and for the purpose herein specified.

Second, the jacket or casing C, divided longitudinally into two parts, and having the flue partitions attached to its interior, so as to be detachable from the retort, substantially as and for the purpose herein specified.

No. 45,909.—G. F. J. COLBURN, Newark, N. J.—*Comb.*—January 17, 1865.—This invention consists in cutting, carving upon, or otherwise affixing to a pocket-comb a graduated scale, so as to serve as measured rule.

Claim.—A comb having graduations, or a rule arranged therewith, substantially as described.

No. 45,910.—GUY DAVIS, Syracuse, N. Y.—*Oscillating Valve.*—January 17, 1865.—This invention consists in arranging with a conical suspended valve a series of openings for the induction and eduction of steam to and from the engine, in such a manner as to relieve it of a large proportion of its friction; the steam being admitted to the centre of the valve, which is made hollow for that purpose.

Claim.—The conical suspended valve I, with its openings J J communicating with the steam chest, and the induction openings K K, and eduction opening T communicating with the cylinder, substantially as described.

No. 45,911.—JOHN H. DICKERSON, Cincinnati, Ohio.—*Portable Forge.*—January 17, 1865.—This invention consists in an arrangement of devices, whereby the separate parts required to constitute a blacksmith's forge can be taken apart, folded up, or packed one within another, so as to occupy as little space, and be rendered as convenient for transportation, as possible.

Claim.—First, the combination of the pan A′, hinged plate Y, bolts W W, and catch X, constructed and employed as herein specified, to constitute a forge bed and screen while in use, and a close and secure tool box in travelling.

Second, the hinged frame G and brace rods L L, employed to support the bellows while in use, and adapted to be compactly folded for transportation.

Third, the combination of the pan A′, screen Y, bellows E C, stand G, lever J, and braces L, all constructed and arranged substantially as and for the purposes set forth.

No. 45,912.—WILLIAM C. DODGE, Washington, D. C.—*Cartridge Retractor for Many-chambered Fire-arms.*—January 17, 1865.—A disk attached to a central spring rod or stem is notched or recessed at its edge in conformity with the chambers of a fire-arm, (whether of a revolving cylinder, or of multiple stationary barrels,) so as to fit under the flanges of the metallic cartridges, whereby all the cartridge cases may be withdrawn simultaneously on the proper movement of the central stem. The spring restores the retractor to its closed position for receiving the cartridges.

Claim.—First, the ejection, simultaneously, of two or more cartridge cases from a many-chambered fire-arm, in the manner and by the means substantially as herein set forth, whether the chambers be stationary or revolving, and whether loaded at the front or rear.

Second, the retractor *a*, provided with the stem *b* and spring *c*, or their equivalents, in combination with the cylinder or barrels of a many-chambered fire-arm.

Third, providing the retractor *a* with a stem, which is made to extend through the cylinder or barrels, and project at either the front or rear end thereof, for the purpose of being operated as shown and described.

No. 45,913.—JOHN DU BOIS, Williamsport, Penn.—*Revolving Flood Gate.*—January 17, 1865.—This invention relates to a mode of constructing flood gates, which constitute a part of the dam when closed, and which are used for making what are known as artificial or splash floods, (when the streams are too low to be navigated,) without accumulating a large body of water, and for letting it off in sufficient quantity at pleasure, for the purpose of floating logs, rafts, boats, &c.

Claim.—First, a centrally balanced revolving flood gate, constructed and operating substantially as herein described.

Second, supporting the gate C in its bearings in such manner that it shall be allowed to rise bodily in the act of opening to allow the water to escape, and using the arms *c c*, or equivalent means, for holding the gate down and preventing it from turning, substantially as described.

Third, the abutment *b* on the floor of the chute, when used in conjunction with a revolving flood gate, operating substantially as described.

Fourth, a revolving flood gate, which is so arranged and constructed that it will be opened by the water in the basin rising above a certain determined level, substantially as described.

No. 45,914.—DAVIS EMBREE, Dayton, Ohio.—*Method of Removing Incrustation from Boilers.*—January 17, 1865.—This invention consists in the use of still slop and of quicklime in removing incrustation from boilers.

Claim.—The use of still slops to prevent or remove incrustation by lime in steam boilers, and the use of quicklime, in the manner herein substantially set forth, to prevent such incrustation.

No. 45,915.—WILLIAM ELMER, New York, N. Y.—*Manufacture of Illuminating Gas.*—Patented in France December 5, 1864.—January 17, 1865.—This invention consists in first distilling the gas stock at a temperature below that at which permanent gas is produced, and then passing the products of distillation through another retort, heated to a high temperature, and containing zinc or other material capable of elevating and fixing the oxygen in the vapor contained in water, or other products from the first retort. Steam or superheated steam may also be added in either retort.

Claim.—The process of manufacturing gas by distilling the gas stock in one retort and converting the volatile product of the distillation and illuminating gas in another retort in the presence of a material which, when at a high temperature, will absorb and fix the oxygen contained in the volatile product of the distillation, the process being conducted substantially as set forth.

Also, the process of manufacturing illuminating gas by distilling the gas stock in one retort, and converting the volatile product of the distillation into illuminating gas in another retort, in the presence of an additional quantity of steam to that obtained from the gas stock, and of a material which will absorb and fix the oxygen contained in the volatile product of the distillation and in the additional steam, the process being conducted substantially as set forth.

No. 45,916.—FREDERICK FICKEY, jr., Baltimore, Md.—*Smoking Pipe.*—January 17, 1865.—This invention consists in fixing to the bottom of a pipe bowl a cup of copper or any suitable material, with a hole in the bottom for the smoke to pass through. The device is so arranged as to protect the bottom of the bowl from the effects of combustion, and at the same time to avoid destroying the absorbent properties of the material of which the bowl is composed.

Claim.—The use of the metallic cup B, in combination with the absorbent bowl of a tobacco pipe, substantially in the manner and for the purpose set forth.

No. 45,917.—JOHN S. FISK, Meadville, Penn., and JAMES WESTERMAN, Sharon, Penn.—*Coal-mining Machine.*—January 17, 1865.—The object of this invention is to substitute machinery for hand labor in mining, with particular reference to economy of material, by sinking thin single-line cuttings in lines perpendicular to the axis of the cutter shaft, and to this end this invention consists in so mounting a circular saw or saws upon an arbor or shaft that it or they may rotate in a horizontal plane at the lower end of the arbor or on any desired part of its length, and in combining the arbor and its saws with gearing to give it both a rotating and a feeding motion, when the latter can be made constant or intermittent at the pleasure of the operator.

Claim.—The combination in a coal-mining engine of one or more circular saws on a single mandrel with an adjustable feeding mechanism arranged on a movable truck, substantially in the manner described and for the purpose set forth.

No. 45,918.—JOHN S. FISK, Meadville, Penn., and JAMES WESTERMAN, Sharon, Penn.—*Mode of Ventilating Mines.*—January 17, 1865.—This invention consists, first, in combining one or more reservoirs for compressed air, located within a mine, with a force pump or engine located at or near the mouth of a mine, so as to exert a uniform pressure at the working point, where compressed air is used as a motor, and to prevent the stoppage of the ventilation in case of a temporary stoppage of the engine.

Second, in the employment of one or more reservoirs for compressed air, located within the mine, into which air is pumped through large tubes or pipes, and from which it is withdrawn through smaller eduction pipes for use as a motor, or for ventilation, or for both.

Claim.—First, the combination with a forcing pump or engine, located at or near the mouth of the mine, of one or more reservoirs for compressed air, located within the mine at a distance from the engine and near the working point, substantially in the manner herein described, for the purpose of ventilating the mine, and of exerting a uniform pressure as a motor, as set forth.

Second, the combination of one or more reservoirs, arranged substantially as herein described, with a large induction and small eduction pipe and stop-valves, as and for the purpose set forth.

No. 45,919.—WALTER FITZGERALD, Boston, Mass.—*Self-loading Fire-arm.*—January 17, 1865.—A lever, by one movement, brings the forward cartridge from the magazine partially into the proper position for firing. By another movement of the lever the cartridge is pressed home, and the next cartridge in the magazine is prevented from passing into the barrel. The piece having been discharged, by another movement of the lever the empty cartridge case is withdrawn from the barrel and ejected from the gun. The next movement of the lever brings the next cartridge partially into position, as before.

Claim.—First, the breech block D and guard lever E, so connected by the pins *c d* and slots *b u* that the vibration of the lever E will give the breech block the required motions in its passage within the breech C, substantially in the manner and for the purposes specified.

Second, in combination with the breech block D the cartridge guide F and cartridge dis-

charger H, when constructed and arranged to operate together with a magazine, substantially as herein described and represented.

Third, the percussion rod G, constructed and operated substantially in the manner and for the purpose set forth.

Fourth, locking the magazine, substantially in the manner set forth.

No. 45,920.—DANIEL D. GITT, Arendtsville, Penn.—*Horse Rakes.*—January 17, 1865.—The object of this invention is to assist the operator in discharging the load, and to provide for the independent action of each tooth to such an extent that there is no danger of breaking the same. A rolling weight is placed upon the tilting bar in such a manner that when the rake is in working position the weight is back of the rake head, but upon tilting the same it will roll forward, displacing the centre of gravity and assisting the operator. The ball may be attached to the lever so as to swing backward and forward instead of rolling. The staple and spring are one, the staple being open to afford freedom of motion to the tooth.

Claim.—First, the employment, in combination with any part of the rake, which, for the purpose of discharging the rake, is moved or movable, of a weight, under the arrangement herein described, so that while the centre of gravity of the lifting apparatus is back of the fulcrum, it shall, on the rake being operated for discharge, be displaced and thrown forward in the manner herein described.

Second, combining with the teeth made of wire or other material, hinged to or hung upon a fulcrum bar, a spring staple, under the arrangement herein described, so as to bear with yielding pressure on the teeth.

No. 45,921.—SAMUEL B. HAINES, Lancaster, Penn.—*Horse Powers.*—January 17, 1865.—This invention consists in the use of horse powers with several radial arms or levers for attaching the horses. It is found that a sudden jerk from one or two horses gives a violent side strain, which is liable to break the machine, and especially to break or throw out of place the central pivot or shaft of the main wheel. The object of this invention is to remedy these difficulties by the use of yokes, pivoted upon the radial levers, and a large hollow conical pivot with a bed plate of peculiar construction.

Claim.—First, the vibrating yokes H, in combination with the levers D and the conical pivot L, substantially as set forth.

Second, the hollow conical pivot L, when cast in one piece with the head plate K, extending so as to fix the gearing at the circumference of the main wheel A, substantially as specified.

No. 45,922.—WILLIAM HALSTED, Trenton, N. J.—*Artificial Fuel.*—January 17, 1865.—This invention consists in taking blocks of bog turf, or peat of salt marsh, prepared by dipping them in tar, and combining with such blocks coal dust, &c., to form fuel.

Claim.—The combination and mixture of the ingredients in the manner and proportions above described.

No. 45,923.—J. M. HARSHBARGER, Brandonville, W. Va.—*Seed Sower.*—January 17, 1865.—In this invention the seed slide is in two sections, which may be disconnected at will, thus rendering half the machine in operation while passing trees or fences, and saving seed thereby.

Claim.—A seed slide, in two or more sections, adapted to be connected and disconnected by the employment of a link *c*, or its equivalent, substantially as and for the purpose herein described.

No. 45,924.—DANIEL HUTCHINSON, Fort Ancient, Ohio.—*Corn Sheller.*—January 17, 1865.—In this machine the corn descends vertically between two revolving disks or plates, one armed with teeth, and the other with ribs, to give the ear a rotary motion. The disks are carried by separate shafts that receive their motion from the same driving wheel. One side of the hopper is prolonged downwards, and forms a breast, against which the ears are held and rotated. The end of the shaft rests upon a spring which yields readily to the pressure of a very large ear.

Claim.—The disks C and D and the breast *h*, when combined and arranged relatively to each other, in the manner and for the purpose specified.

No. 45,925.—JOHN C. KENEDY, Logansport, Ind.—*Straw Cutter.*—January 17, 1865.—This invention consists in constructing the sash or sliding frame of a straw cutter so that it will slide in an inclined position, having attached to it one or more knives horizontally, thereby giving a drawing or a transverse cut; and also in providing one or more knives, which are placed in an inclined position, secured at the upper end by a bolt or rivet, and so arranged and constructed that the motion of the lever causes the inclined knife to work in a hinged manner, bringing the edges of the horizontal and inclined knives together.

Claim.—First, the described arrangement of the diamond or angular-shaped sliding sash or frame D D D, horizontal knives *b* B, when constructed and arranged substantially as described and for the purposes set forth.

Second, the inclined knives *a* A, when constructed and operated by the rod F and lever E, substantially as and for the purposes set forth in the specification.

No. 45,926.—William A. L. Kirk, Hamilton, Ohio.—*Sod Cutter.*—January 17, 1865.—This invention consists in a combination of devices indicated in the claim; to understand which the drawings and specification must be referred to.

Claim.—First, the arrangement of frame A, rollers B and C, and rod-cutting blade E *e e' e''*, substantially as set forth.

Second, the parts A B C D D' *e e' e''* F G K and L, as herein arranged and combined.

No. 45,927.—Robert Levington, Monroe, Mich.—*Bumper Spring.*—January 17, 1865.—This invention consists in attaching a protector to the bed of a car body to serve as a bumper, and also to protect the spring that is attached to the draught bar from any unnecessary strain when the cars are run together.

Claim.—The protector K, and the yoke J in combination therewith, as is clearly set forth and described

No. 45,928.—Edward F. McFarland, Worcester, Mass.—*Forging Apparatus.*—January 17, 1865.—This invention consists essentially in suspending the hammer by means of a strong spiral spring, from a double-elbowed shaft arranged in the upper part of the hammer frame. One end of this shaft projects outside of the frame and is there bent in the form of a crank, and a rod depending from the handle of this crank serves as a means of vibrating the crank to which the spring is attached, and thus occasions a resiliency of the spring, and consequent rise and fall of the hammer.

Claim.—First, constructing the stem D' of a hammer D of a spring which is attached at its upper end to a crank shaft *a*, substantially as described.

Second, the combination of a hammer D, spring stem D', crank shaft *a*, and lever E, operating substantially as described.

Third, the use of shelves *gg*, adapted to support the hammer D when not in use, substantially as described.

Fourth, the application of a counter weight *h*, which is suspended by a spring *k* to a hammer, or its equivalent, which is also suspended by a spring stem, substantially as described.

No. 45,929.—Elijah McKesson, Philips' Mills, Penn.—*Side-hill Ploughs.*—January 17, 1865.—This invention consists in a device for securely locking the corners of the mouldboard to the land side, the land side and mouldboard being fastened into the grooves of the shoes, which form one straight line with the point of the plough.

Claim.—First, the double mouldboard having a triangular front, corners to lock in the groove of the land side, and a pointed projecting termination, constructed, arranged, and operating substantially as and for the purposes set forth.

Second, the combination of the shoes 1 and 2, with the mouldboard and land side and share, when constructed, arranged, and operating substantially as described.

No. 45,930.—John McKnight, Philadelphia, Penn.—*Detachable Flat-top and Elevated Cooking Stove.*—January 17, 1865.—This invention consists in constructing a cooking stove in two parts, so that it can be converted readily into either a flat-top or elevated oven stove.

Claim.—First, so constructing a cooking stove in two sections that it can be converted from a flat-top stove to an elevated oven stove, or *vice versa*, substantially in the manner and for the purpose herein set forth.

Second, the hollow projection *a'*, at the rear of the ash-pit and below the fire grate, the said projection communicating with the flue G, as and for the purpose specified.

Third, the detachable hollow casing H, forming a communication between the ash-pit B and flue G, as and for the purpose set forth.

No. 45,931.—George Meader, Ottawa, Ill.—*Wrenches.*—January 17, 1865.—This device consists of a truncated circular plate having ratchet teeth upon the curved portion of its periphery and a straight bar attached to the straight portion. To the bar the two jaws are attached and caused to slide upon, to, or from each other, by a right and left screw. The slotted end of the handle embraces the disk on each side and turns upon a pivot which passes through its centre, and a spring pawl for holding the disk in any required position, and by which, consequently, the jaws may be projected in any direction within the limits of one hundred and eighty degrees, is attached to the handle in the usual manner.

Claim.—As a new article of manufacture the adjustable wrench, constructed and operated as herein described.

No. 45,932.—George Miller, Washington, D. C.—*Carpenters' Gauge.*—January 17, 1865.—The object of this invention is to facilitate the operation of scribing skirting to stairs, and it consists in a gauge with a free sliding bar, to the extreme end of which is a point. Intermediate between this point and the head is a scribing tooth, which marks the line to which the board is cut after being slid on the board to be fitted, by running the point at the end upon the stair or upon the string board.

Claim.—A gauge constructed substantially as described and for the purpose specified.

No. 45,933.—George Rodney Moore, Lyons, Iowa.—*Fire Chamber Clearer.*—January 17, 1865.—This invention consists of a plate in the front part of the fire pot, attached to the edge of an oscillating grate, and so arranged that when the grate is moved by a draw rod, it prevents coals and ashes falling into the ash-pit in front, and throws them into the lower part of the grate.

Claim.—The attachment of the plate or clamp C, or its equivalent, to the grate E, substantially in the manner and for the purpose set forth.

No. 45,934.—Elias C. Patterson, Chicago, Ill.—*Cultivator.*—January 17, 1865.—In this invention the cultivator blades consist of one long one and three shorter ones arranged behind the first on a bed plate. The bed plate is attached to curved arms or levers, which are pivoted at their rear ends to the frame of the machine. The forward ends are provided with pins which work in slots of levers, pivoted above the axletree, and extending back to the driver's seat. By depressing the back end of the lever the blades are raised from the ground.

Claim.—First, the curved levers A, B, C, D, constructed and operating substantially as described.

Second, the combination of the curved and straight levers, constructed and operating substantially as described.

Third, the combination of the curved and straight levers with the ploughs, constructed and operating substantially as described.

Fourth, the peculiar form and arrangement of the middle rear ploughs, in connection and combination with the two outside rear ploughs, all constructed and operating substantially as described.

No. 45,935.—F. C. Payne, New York, N. Y.—*Artificial Fuel.*—January 17, 1865.—This invention consists of coal dust mixed with plaster of Paris and hydraulic lime, formed into lumps.

Claim.—First, a fuel composed of a conglomerate of coal screenings, or small particles of coal and hydraulic lime, substantially as herein described.

Second, the use of plaster of Paris with hydraulic lime, substantially as herein described, in cementing together coal screenings or small particles of coal, to render the latter serviceable as fuel.

No. 45,936.—Dewy Phillips, Shaftsbury, Vt.—*Laths for Buildings.*—January 17, 1865.—This invention consists in a tongued and grooved lath, with undercut grooves in its surface, the same being designed to aid each other in resisting any disturbing force, and by their use a strong wall is produced and a great saving effected in the amount of mortar required. With brick walls this style of lathing makes the plastering very dry, and under all circumstances the non-conducting character of the wood makes the plastering warmer in winter and cooler in summer.

Claim.—Tongued and grooved laths, formed with grooves in their surfaces, receiving the mortar, substantially as specified.

No. 45,937.—Anson H. Pratt, Yellow Springs, Ohio.—*Floor Covering.*—January 17, 1865.—This invention consists in pasting on floors several layers of paper, the last being printed in water colors and varnished; such as ordinary wall paper. When it is desirable to have the covering removable, the different thicknesses are pasted together to form a kind of pasteboard, which may be used as ordinary oil-cloth.

Claim.—The application and use of figured or ornamental paper, printed with water colors, to floors, as a substitute for oil-cloth and carpets, as herein described, whether stationary or movable.

No. 45,938.—William Price, Cincinnati, Ohio.—*Mangle.*—January 17, 1865.—This invention consists in encasing the working parts of a mangle with a metallic case, the same forming the supports for a table or apron to the articles on a plane between the pressure rollers when open for use, and also to close up the mangle to keep all the working parts free from dust when not in use.

Claim.—Encasing the working parts of a mangle, the case being so constructed and hinged as to let down and form the support for guiding the articles in a line between the pressing rollers, and fold up and close together so as to protect the working parts when not in use, substantially as herein specified.

No. 45,939.—Martin Rinehart, Monroe, Mich.—*Car Coupling.*—January 17, 1865.—This invention consists in providing an apron or direction by which the coupling link is guided into the mouth of the draw-head, so that the coupling may be automatic.

Claim.—The combination of the sliding block A, apron B, with the hook C, and link *d*, substantially as described and for the purpose set forth.

No. 45,940.—George W. Sayre, Pisgah, Ohio.—*Washing Machine.*—January 17, 1865.—This invention consists in the combination of a series of corrugated beaters, which are suspended and actuated by means of cranks and pitmen, and an adjustable weight.

Claim.—The combination of the adjustable oscillating frame K, provided with cranks, pitmen, pendants, and beaters, with the adjustable weight L, and scroll bottom B, arranged and operating in the manner and for the purpose substantially as described.

No. 45,941.—JOHN M. SPIEGLE, Philadelphia, Penn.—*Condenser.*—January 17, 1865.—This invention consists in the use, in connection with the air-pump, of a condensing steam engine of perforated tubes for introducing jets of air into the water, as it is forced by the air-pump towards the discharge valve, thereby converting the water into spray; the object being to prevent the injurious effects which a violently impelled, unbroken volume of water has on the valve. The device consists of a pipe through which the air is conveyed, which is inserted in the passages between the air-pump and the hot-well, and that portion of it which is within the passage is made in the form of a cross, and perforated with small holes for the egress of the air, that it may be mingled freely with the water as it passes towards the discharge valve.

Claim.—The use, in connection with the air-pump of a condensing steam engine, of the perforated tubes *d* and *e*, or their equivalents, for introducing jets or streams of air into the water as it passes from the air-pump to the hot-well, as set forth.

No. 45,942.—A. B. SPROUT, Hughesville, Penn.—*Horse Rake.*—January 17, 1865.—This invention relates to the construction and attachment of the teeth. The teeth are triangular in form, and so applied that a flat surface is presented to the hay in front, while the back of the tooth presents a salient edge. The upper end of the tooth terminates in a flattened coiled spring which surrounds a spool, provided with a notch or chamber which holds the tooth in place. This spool forms the upper part of a plate, which is securely fastened to the head by means of a clamp and screw.

Claim.—First, making a curved rake tooth of a triangular sectional shape, (or its equivalent, semi-elliptical or semicircular,) and so applied that the flat side shall be on the inner side of the curve to endure the tensional strain, while the rear salient edge shall act as a stiffener to the tooth.

Second, the combination of a tooth of a triangular sectional shape, (or its equivalent, semi-elliptical or semicircular,) and with a flat side on the inside of the curve of the tooth, with a coiled spring by which it is attached to the head, and by means of which its elasticity is increased.

Third, the plates C *c*, adapted to be secured in position by the screw *c'*, substantially and for the purpose specified.

Fourth, the spool C2 *c*2 *c*3, constructed and arranged substantially as described, and adapted for the attachment of the spring A, in the manner set forth.

No. 45,943.—MAURICE VERGNES, New York, N. Y.—*Piano-fortes.*—Antedated January 2, 1865.—This invention consists of a drum attachment to a piano-forte, of such a nature that it will automatically operate by simple clock-work arrangement, to be set free when required by a pedal.

Claim.—First, the application to a clavichord instrument of a mechanism to operate a hammer upon a drum, in the manner substantially as above described.

Second, the use of the slide H, and the curb straps to hold the hammer in the condition to produce the roll of the drum, in the manner substantially as above described.

No. 45,944.—OWEN G. WARREN, New York, N. Y.—*Apparatus for Amalgamating Metals.*—January 17, 1865.—This invention consists of a tub provided with a cock and stirrer. On the top of the tub is placed another tub with a perforated bottom. The ore is placed with water in the lower tub, and the mercury in the upper tub, from whence it falls through the perforated bottom in a shower into the ore. The amalgam is drawn off by means of a cock.

Claim.—First, pouring quicksilver down through a sieve or strainer into a mass of comminuted ores and water, which has been subjected to a cooking process to gather the ores contained, in the manner substantially as above described.

Second, obtaining the metals in their successive degrees of fineness by successive leeching with quicksilver poured down through a strainer into the ores and water, and successive gatherings of the amalgam formed, in the manner substantially as above described.

No. 45,945.—EDWARD WEISSENBORN, Hudson City, N. J.—*Oil Lamp.*—January 17, 1865.—The object of this invention is to lubricate moving mechanism with an unfailing certainty, and to graduate the quantity with a view to economy and efficiency, at the same time filter the oil, and thereby protect the journals and bearing of machinery from injury by reason of grit or other hard particles contained in the oil. Its novelty consists in the combination of a sponge, follower, screw, and nut, with the oil cup.

Claim.—The sponge C, the follower D, screw E, and movable winged nut F, applied in combination with each other, and with the oil cup, and operating substantially as herein specified.

No. 45,946.—Jason A. Bidwell, assignor to himself, H. J. Litchfield, Daniel M. Robertson, and Asaph Churchill, Boston, Mass.—*Screw-Nicking Machine.*—January 17, 1865.—This invention consists in a device for grasping the screw blank, and is composed of two jaws, sliding on an upright standard. The lever for operating them is attached to the lower jaw, the upper jaw resting thereon, and the two being clamped together by two side levers, the lower ends of which are attached to the ends of the lower jaw, and are moved therewith. In the upper ends of these levers are slots, cut at such an angle, and sliding over pins or studs in the upper end of the standard in such a manner as to throw said levers forward, when the jaws are raised to carry the screw in front of the saw, which motion causes a cam or incline thereon to press upon other studs, one in each end of the upper block or jaw, and between which and the lower jaw the screw blank is placed.

Claim.—First, the jaws E E, sliding blocks A A′, and controlling spring K, when combined with each other, and with a circular saw P, substantially in the manner and for the purpose herein set forth.

Second, the arrangement and combination of the sliding blocks A A′ with the upright B, slotted side levers O O, and operating lever M, or their equivalents, substantially in the manner and for the purpose herein set forth.

No. 45,947.—Joseph De Rosthorn, Vienna, Austria, assignor to Clemens Herschel, Davenport, Iowa.—*Casting Molten Metal.*—January 17, 1865.—This invention consists in what is technically called the riser, by substituting for the same a heavy weight, to the bottom of which, and projecting downward therefrom, is attached a wooden plug or plunger, which breaking through the crust which forms on the surface of the molten mass, is forced down by the weight above, and compresses and condenses the metal in the mould.

Claim.—The improved method of operating to increase the density and strength of metallic castings, substantially as set forth.

No. 45,948.—Loomis G. Marshall, Mokena, Ill., assignor to himself and F. W. Hughes, Pottsville, Penn.—*Grate.*—January 17, 1865.—This invention is designed as an improvement on Morse and Lewis's patent, and consists of a cone-shaped or pyramidal grate, opened at its bottom, intended to be placed in the centre of a fire-pot in a stove. The bars of these grates are inclined downwards from the centre to the outside, so as to prevent the fire-coal, sawdust, tan, &c., which it is intended to burn, from choking up the apertures in the grate.

Claim.—A conical or angular-shaped grate, formed of bars sloping from the inside to outside, as herein described and for the purposes set forth.

No. 45,949.—Robert Murray, Boston, Mass., assignor to himself and James W. Tufts, Medford, Mass.—*Faucet.*—January 17, 1865.—The valve shaft is in line with the horizontal induction pipe, which induction pipe has an enlargement near its outer end to form the valve case. Around the mouth of this narrow pipe is a recess for the feet or projecting parts of the valve shaft to move in, the intermediate spaces permitting the flow of the liquid into the valve chamber, the valve shaft narrowing to pass through a packed screw cap, which adjusts the enlarged interior part within its apartments. The eduction port is on the under part of the valve case, and the leather packed valve is held to this point or seat by a spring, having its opposite abutment within the described enlargement of the valve shaft. The movement of this valve is circumscribed by stops to a traverse sufficient to cover and uncover the eduction port.

Claim.—The improved faucet, having its valve shaft arranged in the prolongation of the axis of its induction tube and pivoted in or at the inner end thereof, and made with its inner journal so channelled as to enable a fluid to pass into and through it while passing from the induction tube into the valve case, the faucet being in other respects as specified.

No. 45,950.—William Painter, Baltimore, Md., assignor to himself and Charles Painter, Owing's Mills, Md.—*Material for making Boxes.*—January 17, 1865.—This invention consists in saturating pasteboard with asphaltum, and using it as a substitute for tin, in making boxes, &c.

Claim.—As a new article of manufacture the asphaltic board, made substantially as described, for the manufacture of boxes, packages, and other articles.

No. 45,951.—Fredrika Schenkl, Boston, Mass., administratrix of John P. Schenkl, deceased, assignor to self and Edward A. Dana, Brookline, Mass.—*Packing for Rifled Projectiles.*—January 17, 1865.—The embracing and packing sabot is made of papier-maché, as usual fitting the exterior and base of the projectile, but having a metallic band on its front end, and a cup, or shoe and band combined, to protect its base from the disrupturing effects of the explosion of the charge.

Claim.—The combination of a papier-maché sabot, with a metallic ring at top, and a ring and disk of metal at the base to protect it, substantially in the manner described.

No. 45,952.—Christopher M. Spencer, assignor to Spencer Repeating Rifle Company, Boston, Mass.—*Self-loading Fire-arms.*—January 17, 1865.—This invention relates to the magazine for containing the cartridges, which consists of two metallic tubes, the one fitting within the other, the outer tube passing through the stock and opening at the but, and serving to secure the said stock to the breech portion or receiver, within which tube the cartridges are placed, and the inner and removable tube (closed at its rear end, and containing the feeding spring and follower) passing over the cartridges, as it is pressed within the opening, within which it is secured by a "bayonet-joint" catch when wholly inserted.

Claim.—First, the compound magazine inserted in the stock of the piece, and consisting of two metallic tubes, constructed and operating substantially in the manner described.

Second, in a double tube magazine chamfering the inner side of the forward end of the inner tube F, in the manner and for the purpose described.

Third, the arrangement of the groove *c*, and catch *h*, for conjoint operation, as specified.

Fourth, the combination and arrangement of the cap G, arm H, recess *d*, and pin *d'*, substantially in the manner described.

Fifth, the combination of the receiver B, tube D, nut E, and stock A, in the manner and for the purpose set forth.

No. 45,953.—James Crutchett, Stroud, England.—*Apparatus for Winding Thread from the Skein.*—Patented in England August 23, 1864.—A reel is constructed each of whose arms can be extended as desired, by slides, and all of them can be folded together by means of a central umbrella joint, to which they are radially hinged; the outer ends have each a pivoted curved piece for sustaining the skein. The thumb piece, in connection with a lower disk or flange on the central joint, serves to hold the arms extended for operation, and also by a change of its position to allow the release of the arms, when the same are to be folded up in a compact form. An ordinary winding apparatus is used in connection with the reel for winding the yarn upon spools or into balls.

Claim.—First, the combination of the sliding arms *a a a a a a*, figures 1 and 3, with the curved finger *d*, for adjusting the apparatus to the size of the skein, and the folding joint G, for folding the same into a convenient portable form as above described.

Second, the application of the thumb screw, figure 6, with the slots *f f f f f f*, and the projections *g g g g g g*, for the purpose and in the combination above described.

Third, the foregoing arrangement of the reel as illustrated in figures 1, 3, 4, 5, 6, in combination with the winding apparatus represented in figures 7 and 8, all for the purpose above described.

No. 45,954.—Charles Emmanuel, Paris, France.—*Astronomical Instruments.*—January 17, 1865.—The general character of this invention will be evident from the claim. For a detailed description the specification must be referred to.

Claim.—The astronomical instrument herein described, in which a theodolite, an equatorial and an ecliptic instrument are combined, affording the means of ascertaining immediately the position of the heavenly bodies in relation to the horizon, equator, and the ecliptic, substantially in the manner herein set forth.

No. 45,955.—Louis Emile Constant Martin, London, England.—*Steam Boiler.*—Patented in England April 28, 1864.—This invention consists in the arrangement of two or more fires in which coal is burned, in combination with one or more refractory hearths, on which incandescent fuel is kept for the purpose of consuming the gases which have been evolved from the coal burned in the primary furnaces.

Claim.—The arrangement of one or more fires substantially in the combination described, to generate the usual products of combustion, with one or more auxiliary incandescent fires, arranged on one or more refractory hearths, substantially as described, through which these usual products are carried, and which, after being transformed into combustible gases, pass through one or more flues into one or more chambers of combustion, where these ultimate gases are ignited, and thus effect a large economy in fuel.

No. 45,956.—Halsey H. Baker, New Market, N. J.—*Fire Bank.*—January 17, 1865.—This invention consists of a device for regulating the combustion in stoves so as to preserve the fire alive at a small expenditure of fuel. It is composed of two semicircular plates of metal, hinged in the middle, and made to double up by the force of gravity alone so as to go into the stove door. In these plates are draught holes, closed by dampers; on top is a loop or staple in which to insert a poker to handle it by.

Claim.—First, a fire bank composed of a plate, or combination of plates, fitted to the fire-pot or fire-box of a stove, range, or furnace, to lie upon the fire, substantially as herein described.

Second, providing such a fire bank with one or more openings and valves or shutters, substantially as and for the purpose herein described.

Third, the construction of such a fire bank of two or more plates hinged together in such a manner as to fold substantially as herein described for the purpose of enabling it to pass through the door of a stove or furnace.

Fourth, providing such a fire bank with a hook or loop *i*, so applied in combination with a hinge or hinges that it will fold by gravitation when suspended by said hook or loop, substantially as and for the purpose herein set forth.

No. 45,957.—W. B. BILLINGS, New York, N. Y.—*Coal-oil Stove.*—January 17, 1865.—This invention consists in the combination of the coal-oil lamp, for which a patent was granted to the said Billings in October, 1864, with a cooking stove or range. The lamp is set under the stove. The wick tubes pass up through an air-chamber formed between two diaphragms into cones or deflectors in the top diaphragm, which is the bottom of the stove. The under diaphragm or the sides of the chamber may be finely perforated, or the air-chamber may be filled with some non-conducting substance through which sufficient apertures admit necessary circulation.

Claim.—First, the use and adaptation of the body or sides of the stove or range D, to serve as and perform the office of a flue or chimney over the lamp or oil-holder A, substantially as described and for the purposes set forth.

Second, the attaching of one or more air guides, cones, or deflectors in the diaphragm C, and the adjustment of the same in the stove or range F, substantially as described and for the purposes set forth.

Third, the arrangement of the diaphragms C and *g g*, thus forming an air-chamber between the oil-holder and stove or range, substantially as described and for the purposes set forth.

Fourth, a non-conductor of heat used as packing between the stove and the oil-holder, arranged substantially as described and set forth

Fifth, the insulation of the lamp or oil-holder by non-contact with the heater, stove, or range, substantially as described and set forth.

No. 45,958.—JOSEPH C. BIRD, Rising Sun, Md.—*Safety Brakes for Horse-powers.*—January 17, 1865.—This invention consists of a stop or catch, above which the lever which holds up the brake cannot be elevated, so that the brake cannot be applied in any other way than by the parting or flying off of the belt, entirely obviating the liability of the jarring of the machine, throwing upwards or outwards the lever or trigger, and thus letting down the brake upon the driving wheel.

Claim.—In combination with the trigger or lever D, the stop or catch which prevents it from rising beyond a given point, which would otherwise apply the brake without the parting or flying off of the belt, substantially as herein described.

No. 45,959.—T. G. CROSBY, Buffalo, N. Y., assignor to BUSHNELL STRONG and MAJORIE H. CROSBY.—*Rudder.*—January 17, 1865.—This rudder is formed with concave sides, the hollow part of which is vertical, extending through the blade.

Claim.—Constructing a rudder for vessels with concave sides, as herein substantially set forth.

No. 45,960.—THOMAS HOPKINS, Cincinnati, Ohio.—*Apparatus for Rendering Lard.*—January 17, 1865.—This invention consists in providing the caldron of a rendering apparatus with a colander, in which the fat is placed, so that it can be lifted bodily out when sufficiently cooked, and also in providing the caldron with a dipper having a valve, so that it can be readily emptied when lifted out of the caldron. To enable the dipper to be removed with facility, a crane is provided, which is supported by the base, which may be moved along a bar, the top of the crane being held in position by means of a block and notches. There is also attached to the apparatus a grapple, composed of a perforated plate, fingers, and hooks, to facilitate the handling of barrels, &c.

Claim.—First, the colander C *c c'*, formed and adapted to operate as set forth.

Second, the dipper D D', *d d'*, *d''*, formed and adapted to operate as set forth.

Third, in the described combination, the devices F G G', *g*, H K, and L', or their equivalents, for enabling a crane to be shifted from place to place.

Fourth, the grapple T U U', *v*, V, *w*, W X Y Z Z', formed and operating substantially as set forth.

No. 45,961.—G. A. LEIBIG and E. K. COOPER, Baltimore, Md.—*Manufacturing Fertilizing Phosphates.*—January 17, 1865.—This invention consists in heating or roasting the native phosphate of iron or alumina with lime, caustic soda, carbonate of soda, or sulphate of soda or equivalent salt, so as to produce a soluble phosphate.

Claim.—The process, substantially as described above, for producing a fertilizing phosphate containing soluble phosphates.

No. 45,962.—CHARLES ABEL, New York, N. Y.—*Hoisting Machines.*—January 24, 1865.—This invention consists in the application of screw gearing in the construction of a hoisting machine, in such manner as to cause the threads of a screw to act as a stop or check to a windlass wheel, and thus to readily transform velocity into power, and cause the load to be securely held at every point of its elevation.

Claim.—The construction and use of the worm wheel D, with its connected wheel E and worm screw C, in combination with the pulley A, substantially as and for the purpose described.

No. 45,963.—EDWARD ANDREWS, Palo Alto, Penn.—*Shutter Bolts.*—January 24, 1865.—This invention consists in passing over the bolt a sliding yoke or stirrup, which, by means of a spring, catches into a notch in and holds the bolt when it is thrown back. This stirrup is fastened at its under end to a lever secured at the back of the bolt, and projecting a short distance beyond the rebate on the shutter. When the opposite shutter closes against this lever it compresses the spring, throws the yoke out of the notch, and releases the bolt, which, by means of the spiral spring in its rear, shoots forward and secures the shutter.

Claim.—The combination and arrangement of the bolt B, the latch D, lever F, and spring E and J, when used for the purpose herein fully described.

No. 45,964.—PHINEAS BALL, Worcester, Mass.—*Tapping Water Pipe.*—January 24, 1865.—This invention consists in a clamp formed of two half rings, with lugs at the ends of each half for securing them together. One of the rings is furnished with a radial socket projecting from its periphery, into which, when the ring is applied to the pipe, with packing between, a straight joint cock is inserted, through which a drill can operate to bore the pipe, after which operation the drill is withdrawn, and the branch pipe inserted in said cock, or attached thereto.

Claim.—First, the combination of the clamping irons H H′ with the pipe A, tap holder D, and tap *c*, substantially as and for the purpose described.

Second, the combination of the clamping iron H with tap holder D and tap C, substantially as and for the purposes described.

Third, the combination of the packing I with the pipe A, tap holder D, and tap C, substantially as and for the purposes described.

No. 45,965.—STEPHEN T. BISHOP and ANDREW STEVELY, Fond du Lac, Wis.—*Horse-power Elevator and Excavator.*—January 24, 1865.—This invention consists, first, in combining a tread horse-power with an endless chain excavator and elevator; second, in a peculiar construction and arrangement of horse-power excavator and elevator, all embraced in a single machine for grading railroads, and for other purposes.

Claim.—First, the combination of a tread horse-power with an endless chain excavator and elevator, substantially as set forth.

Second, the adjustable frame E, or its equivalent, in combination with the tread horse-power frame, substantially as specified.

Third, the machine constructed and arranged substantially as described.

No. 45,966.—STEPHEN T. BISHOP and ANDREW STEVELY, Fond du Lac, Wis.—*Horse-power Elevator and Excavator.*—January 24, 1865.—This invention consists, first, in so constructing and arranging a horse-power elevator and excavator as to render the machine movable, and a horse upon the same; and, second, in a peculiar arrangement of gear wheels in connection with travelling or ground wheels, for moving said machine with a horse-power upon it.

Claim.—First, so constructing and arranging a horse-power elevator and excavator as to render the machine movable with the horse upon the same, substantially in the manner and for the purposes set forth.

Second, the above described arrangement of the wheels U and V in combination with the two sets of wheels R and S, substantially as specified.

No. 45,967.—STEPHEN T. BISHOP and ANDREW STEVELY, Fond du Lac, Wis.—*Horse-power Elevator and Excavator.*—January 24, 1865.—This invention consists in certain peculiar arrangements of hooks and buckets upon an endless chain for use in excavating and elevating earth in grading railroads, &c.

Claim.—First, the combination of the hook L with the bars I and the endless chain, substantially as described.

Second, the use of the bar I for attaching the hooks or buckets, or both, to the endless chain, substantially as described.

Third, the arrangement of hooks upon one part of the bar I, and at the same time putting a bucket or buckets upon the other part or end of the bar, substantially as described.

Fourth, the arrangement of the hooks and buckets alternately upon successive bars I, substantially in the manner and for the purpose set forth.

No. 45,968.—STEPHEN T. BISHOP and ANDREW STEVELY, Fond du Lac, Wis.—*Horse-power Elevator and Excavator.*—January 24, 1865.—This invention consists in certain arrangements for elevating and depressing an endless chain and pulley for excavating earth in grading railroads, &c.

Claim.—First, the adjustable frame C in combination with the horse-power, substantially as set forth.

Second, the arrangement of the ratchet wheels as shown in Figs. 1 and 3, in combination with the crank N and frame E, substantially in the manner and for the purposes set forth.

Third, the combination of the ratchet wheels and crank N with the ratchet bar, Fig. 3, substantially in the manner and for the purposes described.

No. 45,969.—WILLIAM BREITENSTEIN, New York, N. Y.—*Looms.*—January 24, 1865.—This invention relates to that class of looms in which the shuttle is carried by a holder halfway across the warp, and is there delivered to a corresponding holder which carries it past and out of the other half. The novelty consists in the use of sliding bars carrying shuttle holders, so made as to open and shut, and thus seize and discharge the shuttle; other sliding bars, operated by these, acting by means of slotted inclines and levers to open and shut the holders. A shield plate on each shuttle holder prevents the warp threads from getting within the arms or jaws of the holders.

Claim.—First, the arrangement and construction of the sliding bars C C′, provided with suitable arms at their ends forming the shuttle holders, and operated in the manner and for the purpose substantially as set forth and described.

Second, the construction of the shuttle holders and the arrangement of the arm *m*, operated by a spring *o*, and acted upon by the lever G or G′, in the manner and for the purpose described.

Third, the arrangement and combination with a shuttle holder of the shield plate F, in the manner and for the purpose set forth.

Fourth, the sliding bar H in combination with the levers G G G′ G′, constructed and operated in the manner and for the purpose specified.

Fifth, the arrangement of the hook levers N N′, with their springs *r r′* attached to sliding bar H, in combination with springs *s s′* attached to the breast beam B, and acted upon by the arms *p p′* of the sliding bar C C′, for the purpose of operating said sliding bar H, in the manner substantially as set forth and described.

No. 45,970.—P. S. BREWSTER and C. M. HINES, Lime Hill, Penn.—*Stone Gatherer.*—January 24, 1865.—This invention consists of a rectangular frame mounted on rollers near the front end of the frame. At about the centre of the frame is a cross-bar, having journals which have their bearings in the side pieces of the frame. To this cross-bar are curved teeth secured and run upon the ground for the purpose of gathering the stones. When the teeth are loaded they are thrown back by means of a lever and deposited upon a platform in the rear.

Claim.—First, the pivoted bar C provided with gathering fingers *c*, and operated by means of the bail H, levers F, and rods E G, substantially in the manner herein described.

Second, the platform E in combination with the lock bar A′ *a′*, spring *a*2, and plate D′, when the whole are employed in conjunction with the gatherers C *c*, in the manner and for the purposes explained.

Third, in combination with the gatherer C *c*, the rollers B B extending across the machine to raise the fingers over stones too large to be lifted by them, substantially as set forth.

No. 45,971.—GEORGE BUNCH, Grand River township, Mo., and JAMES A. PRICE, Breckenridge, Mo.—*Corn Planter.*—January 24, 1865.—This invention consists in a triangular frame, the rear end being supported on wheels. Above the frame and over the wheels is a shaft extending across the frame, on each end of which are seed cells, which are worked back and forth by the right handle, thus discharging a given quantity of seed at each motion.

Claim.—The sliding handle I and sliding bar H connected together and applied to the frame A and shaft D, substantially as and for the purpose herein set forth.

No. 45,972.—CALEB CADWELL, Waukegan, Ill.—*Sewing Machines.*—January 24, 1865.—This machine is of a shape adapted to sewing tubular goods, and is designed for quilting and other sewing in square or rectangular figures, the feed dog being, by a novel system of mechanism, so operated as to feed forward or backward, and crosswise and return. The shutter is carried in a sliding frame, and a thread catcher in the raceway assists in carrying the loop over the shuttle. The thread-winding apparatus differs from those in use by locking itself when placed in and out of contact with the driving wheel by means of a fixed spring and a projection.

Claim.—First, the slide E′ having a groove *e′* to actuate the pin *f′* on the thread catcher F *f*, which guides the thread around the shuttle, substantially as described.

Second, the pivoted bar P for taking up the slack thread when operating in combination with the flipper P′ and projection *k′*, in the manner herein set forth.

Third, the tension device Q2 Q4 Q5 and the pin Q2 for the spool, all mounted upon the spindle Q3 on the arm D, so that they may be removed and replaced at will.

Fourth, the adjustable block *h*3 and circular block H2 in combination with the notched aperture, for imparting a variable movement to the feed surface H, the whole being operated by means substantially as herein described.

Fifth, the combination of the circular blocks H7 H8, the former, H7, being moved vertically by turning on the latter, H8, so as to raise and lower the feed surface, in the manner and for the purpose set forth.

Sixth, the thread-winding apparatus R R1 R2 R3 *r* operating in connection with a spring S, whereby it is held down to work in connection with the driving wheel B, or retained out of contact therewith, as stated.

No. 45,973.—Ansel Cain, Holyoke, Mass.—*Means of Working Ships' Pumps.*—January 24, 1865.—A pendulum suspended from the top bar of a frame carries near its weighted lower end two segmental ratchets, the lower one being toothed on its concave and upper side, and the upper toothed on its convex or lower side. These teeth engage with pinions, forming parts of sleeves on one shaft, said sleeves being geared to disks, rigidly attached to the shaft, so as by an obvious arrangement of the gearing to obtain a continuous revolution of the shaft from the oscillating movement of the pendulum. The ship's pump is operated by a crank arrangement at the end of the shaft.

Claim.—Operating the pumping apparatus of a ship or vessel by means of an oscillating weight, in combination with the mechanism described, the whole arranged substantially as set forth.

No. 45,974.—Cyrus Chambers, jr., Philadelphia, Penn.—*Duster for Brick Machines.*—January 24, 1865.—This invention, which relates to that class of brick machines in which the bricks are borne off on an endless apron, consists in placing on the latter a box in which sand or dust is kept in suspension, so that the bricks, as they pass through said chamber, become thoroughly covered on every side with the suspended sand or dust. The machine chiefly consists of a chamber or box, surmounted by a reservoir or hopper, from which the sand is constantly supplied, and by two hollow cones thrown upon every side of the bricks as they pass through the chamber.

Claim.—First, applying sand or dust to the surface of undried bricks in a chamber in which those materials, or either of them, are kept in suspension by mechanical means.

Second, passing bricks as they come from a brick machine through a box or chamber in which sand or dust is kept in suspension by mechanical means, substantially in the manne- and for the purpose described.

Third, the use, in a dusting apparatus, of the cones P, constructed and operating subr stantially as described, for giving direction to currents of sand or dust, for the purpose specified.

No. 45,975.—J. H. Champlin, Essex, Conn.—*Railroad Car Brakes.*—January 24, 1865.—This invention relates to that portion of a railroad-car brake employed to create friction upon the wheels, and consists in the employment of stone or other mineral substance in the construction of the friction block.

Claim.—A friction block for railroad-car brakes, formed from stone or its equivalent, combined with and made adjustable by means of the screws *a a* in the case D, and arranged to operate substantially in the manner and for the purpose specified.

No. 45,976.—Otis N. Chase, Boston, Mass.—*Combined Seed and Potato Planter.*—January 24, 1865; antedated January 8, 1865.—This invention consists of a frame hanging upon an axle, to the upper part of which frame the motive power is applied, and the lower part carrying one or more ploughs, which open the ground for the seed and cover it again with wings attached to its rear. The upper and lower parts of this frame are connected by a toggle lever, which elevates or depresses the plough. A large wheel, having in its periphery seed cavities, varied in depth by screws, passes through the bottom of the seed box. Different wheels may be used for different kinds of seeds. The seed box has at its bottom an inclined plane, to which a vibratory motion may be given by projections upon the seed wheel. A small portion of the box is removed in front to allow the passage of the seed, and springs are placed upon each side of the opening. For planting potatoes, curved knives are inserted in the periphery of the wheel, and made adjustable by means of set screws. These knives carry the potato from the seed box to the rear of the plough, where they are removed by a slit in the attached conveyor.

Claim.—First, the combination and arrangement of the toggle lever *d* and the frames A and C with one or more ploughs, substantially as described.

Second, the projections represented by the knives or hooks *f f*, &c., in combination with the stripping slot *i*, or its equivalent, substantially as described, for the purpose set forth.

Third, the combination and arrangement of the springs *j j*, inclined plane *g*, and seed box H, with the projections, as represented by the knives or hooks *f f*, &c., substantially as described, for the purpose set forth.

No. 45,977.—Lucius E. Chittenden, Washington, D. C.—*Material for the Manufacture of Buttons, Handles for Knives, and other purposes.*—January 24, 1865.—This invention consists in the use of the interior of the shells of the animals known as fresh-water clams, or muscles, for the manufacture of buttons.

Claim.—The manufacture of the articles above named, and the use, in whole or in part, for such manufacture, of the interior or nacreous portion of the shells of the fresh-water molluscous animals of the United States and North and South America, substantially in the manner above described, or in any other, substantially the same, which will produce the intended result or effect.

No. 45,978.—Elliot H. Crane, Jonesville, Mich.—*Leather-channelling Tool.*—January 24, 1865.—The object of this invention is to facilitate the cutting of V-shaped channels upon the edges of harness straps, boots, and shoe soles. It consists chiefly in a metallic shank,

having a handle attached. At the other end there are two adjustable cutters which intersect each other. A gauge is adjusted to or from the shank, by which the distance from the edge of the leather may be regulated at will.

Claim.—The combination of the adjustable gauge G with the shank A, substantially in the manner herein shown and described.

Also, the combination of the block C and cutter B with the shank A, substantially as herein shown and described.

Also, the combination of the cutter F with the cutter B, block C, and shank A, substantially as herein shown and described.

Also, the combination of the gauge G with the block C, cutters B F, and shank A, substantially in the manner herein shown and described.

No. 45,979.—JOHN P. CULVER, New York, N. Y.—*Hooks and Eyes.*—January 24, 1865.—The beak of the hook is broad and flattened, the bend being narrow. The eye is narrow transversely, and long in the direction of the line of attachment. To insert the hook it must be presented laterally, or at an angle to the eye.

Claim.—A hook and eye, combining the widening *e* of the bill of the hook with the narrower opening *b* of the eye, substantially as and for the purpose herein specified.

No. 45,980.—CHARLES DISSTON, Philadelphia, Penn.—*Method of attaching Handles to Cross-cut Saws.*—January 24, 1865.—This invention consists in a handle provided with ferrules and side straps, a plate being placed in a slot to receive the saw, on the upper edge of which are projections to fit in notches made in the lower edge of the saw; this plate hanging on a pivot passing through the handles, strap, and plate, so that when the saw plate is placed in the slot of the handle, the plate will incline, and receive the projection of the plate in the notches of the saw, in which position the saw is secured by driving a wedge over the saw.

Claim.—First, the handle A, its ferrule *c* and strips *b*, the key F and self-adjusting plate D, the whole being constructed and arranged for attachment to the end of the saw, substantially as described.

Second, the self-adjusting plate D, hung to the strips *b*, and having projections *e e*, adapted to notches in the edge of the saw, all as set forth.

No. 45,981.—WILLIAM H. DOANE, Cincinnati, Ohio.—*Scroll Saws.*—January 24, 1865.—This invention consists in providing in a scroll sawing machine a tubular stock, in which the saw plays, and at the lower end of which is placed a guide for the saw of hardened steel plates at the back and sides of the saw. This stock is also provided with a door at its lower end, and also in a tubular sleeve, through which the saw stock passes and is held at any desired height, all forming a compact and easily adjusted arrangement.

Claim.—First, the combination of the devices A B C *a b*, the same being adapted for and constituting a portion of a scroll sawing machine or saw-mill, substantially as herein set forth.

Second, the combination of the tubular sleeve C, key *c*, screw *d*, recessed or tubular shank *e*, and guide stock D, substantially as and for the purpose set forth.

Third, a tubular foot stock D, with a guide holder D′ on its lower end, the said holder being constructed and having guides fitted upon it, substantially as and for the purpose set forth.

Fourth, the combination of the tubular sleeve C, the stock D, feather *c*, and set screw *d*, substantially in the manner and for the purpose described.

Fifth, the employment of a door E, or its equivalent, in combination with a foot stock D D′, substantially as and for the purpose described.

No. 45,982.—PORTER DODGE, Perkinsville, Vt.—*Joining and Fitting Corners of Soapstone Stoves.*—January 24, 1865.—The ends of the stove have grooves, into which the sides of an angular iron plate are fitted. The plate is secured by tenons to the top and bottom of the stove. An open-work metallic cap fastened to the plate covers it and the ends of the stove.

Claim.—In combination with the grooved soapstone slabs A, the iron or metal corner or angular plate B, substantially as and for the purposes described.

Also, in combination with the grooved soapstone slabs A and angular plate B, the cap C, substantially as and for the purpose specified.

No. 45,983.—WILLIAM C. DODGE, of Washington, D. C.—*Revolving Fire-arms.*—January 24, 1865.—The frame of the arm is jointed so as to allow the barrel and cylinder to swing to one side, or the barrel to swing to one side of the cylinder, for exposing one end of the said cylinder, to permit the action of a cartridge retractor; and the improvement consists in mounting the cylinder on a tubular pin rigidly attached to the frame at one end, and in a particular arrangement of latching device for locking the movable frame securely in its closed position.

Claim.—First, the sliding lock-bolt *q* arranged in bridge piece *p* as shown and described, whereby the parts can be locked automatically, and can be unlocked and swung over by a single application of the thumb, and the whole operation performed by the use of one hand only.

Second, hanging the cylinder on the tubular bolt *g*, or hollow journal *h*, when connected by the frame at one end only, whether at the front or rear.

Third, supporting the detached end of the cylinder by the projection *i* and groove *j*, substantially as specified.

Fourth, locking the projection *i* in place by the latch *k*, or its equivalent, substantially as shown and described.

Fifth, so arranging bolt *l* and latch *k* that both can be operated simultaneously and by a single movement.

Sixth, constructing and arranging bolt *l* and latch *k* in such a manner as to permit the front and rear portions of the frame to be locked automatically, as they are swung into position for firing, whereby the use of one hand only is required in the operation.

No. 45,984.—A. ELIAERS, Boston, Mass.—*Elastic Studs for Doors.*—January 24, 1865.—This invention is applicable to doors, French windows, &c., where two swinging edges or surfaces are brought in contact with each other, its object being to prevent noise or jar and to hold the parts in proper relative positions. The invention consists in the use of two or more elastic studs or buttons, working or rubbing against each other in the ends or edges respectively of the swinging, sliding, or otherwise movable part and the stationary rebate or jamb.

Claim.—First, my improvement in the construction of doors, French windows, &c., which consists in the use of two or more elastic studs or buttons, working or rubbing against each other respectively in the ends or edges of the swinging, sliding, or otherwise movable part, and the stationary rebate or jamb, as described.

Second, the combination of the elastic studs or buttons, operating together, as described, and one or more elastic studs or buttons placed in the rear of the first set of studs or buttons, the whole serving to prevent noise and to hold in position, as set forth.

No. 45,985.—EDWIN ESTABROOK, Jersey City, N. J.—*Explosive Shell.*—January 24, 1865.—The interior cavity of the shell is bounded by plane sides in the form of a regular polyhedron. It is found that there are "planes of weakness" radiating from the axis of the shell cast in this way, along which the tendency is to yield to the force of the explosion of the charge, whereby the shell is caused to divide itself into pieces of nearly uniform size and corresponding in number to the faces of the cavity. Much greater destruction is supposed to be effected in this way than follows the explosion of ordinary shells.

Claim.—The plane or nearly plane faces B^1, B^2, &c., on the interior of an explosive shell, arranged relatively to each other in the manner and so as to produce the effect herein set forth.

No. 45,986.—EDWIN ESTABROOK, Jersey City, N. J.—*Fuze for Shells.*—January 24, 1865.—This invention consists in making the inner end of a metallic fuze so thin that it will collapse by the bursting charge, or close, thus economizing and strengthening the rupturing force.

Claim.—The employment in explosive shells of a fuze plug, adapted to collapse and crush by the action of the exploding charge and to stop the escape of gas through the fuze plug, substantially as herein set forth.

No. 45,987.—J. W. FAWKES, Decatur, Ill.—*Cultivator.*—January 24, 1865.—The frame is pivoted near its rear to the axle, and is moved laterally by a T-shaped foot lever, working upon the draught-pole. The teeth are drawn up from the ground by a short lever attached to a segment, over which works a linked or jointed rod. This segment is held back of a wooden pin. The ends of short levers are fastened up by leather straps when the ploughs are not in use.

Claim.—The frame E applied to the draught-pole C, as shown, in connection with the foot-levers H G, arranged with the frame, to admit of the latter being operated as and for the purpose specified.

Also, the pivoted plough standards J connected to segments M by bars L and links J, in connection with the wooden pins *l* in the segments, all arranged substantially as and for the purpose set forth.

Also, providing the segments M with handles N in connection with straps O on the frame E, as and for the purpose set forth.

No. 45,988.—W. H. FREEMAN, Bloomfield, Iowa.—*Gang Plough.*—January 24, 1865.—This invention relates to the combination and arrangement of adjustable plough beams within the frame of the machine, whereby the driver from his seat can regulate the depth of the ploughs as well as their inclination or pitch.

Claim.—In combination with the stationary frame A, the hinged plough-beam or beams F and levers G, I, and H, for the purpose of adjusting the height as well as the inclination of the ploughs, substantially in the manner and for the purposes described.

No. 45,989.—DWIGHT B. FULLER, Buffalo, N. Y.—*Piston Packing for Pumps.*—January 24, 1865.—To form a pump piston, a disk is fixed at the end of the rod with a movable disk above or behind it, the latter being held to duty by a screw nut. Between these disks there

is a cup-shaped packing made of leather, within the cup of which is a disk of soft rubber. As the leather packing wears loose, it may be pressed out by screwing the moving disk down against the rubber disk, which disk is always protected from wear and other injury.

Claim.—The combination of the follower E, elastic disk G, and leather bonnet H, for the purposes and substantially as described.

No. 45,990.—SQUIRE GAMBELL, Otisco, N. Y.—*Washing Machine.*—January 24, 1865.—This invention consists in the employment of a suspended oscillating suds-box of semi-cylindrical form, in connection with a fixed or stationary dash-board attached to the suds-box.

Claim.—The oscillating suds-box A provided with the horizontal slats *g* and wash-board F, in combination with the fixed or stationary dash-board E, all arranged substantially as and for the purpose set forth.

Also, the pivot-bar G with upright lip K attached, in connection with the projections *l*, one or more, on the exterior of the suds-box, for the purpose specified.

No. 45,991.—E. P. GARDINER, New York.—*Apparatus for Desulphurizing and Amalgamating Ores.*—January 24, 1865.—This invention consists of a furnace made of brick or iron and supporting a vertical cylinder. The cylinder is provided with a shaft, to which is keyed a perforated diaphragm, the shaft being also provided with agitating arms, as shown. From the lower part of the cylinder extends a channel connecting with a vertical pipe, which is provided with a feed screw, the said pipe having a funnel attached to it near the top. The cylinder is supplied with mercury from a reservoir by means of a pipe. From the upper part of the cylinder extends a pipe which terminates in a condensing tube, the said condensing tube being provided with a shaft and agitators. The top of the cylinder is provided with a channel through which cold water is caused to circulate, the waste being carried off by a pipe into a condensing tube. Rotary motion is imparted to the shafts by means of suitable gearing.

Claim.—First, the form and construction of the receiving and operating vessel F, by which it is to be adapted to the uses and purposes required and designed, as above described.

Second, the vertical shaft and its attachments of pins and revolving perforated diaphragm plate, combined, arranged, and operating within the vessel F, in the manner and for the purposes described.

Third, the combination and arrangement of the operating vessel F, the feed-pipe and endless screw I K, and the eduction or discharge pipe P, and the rotation of the shaft and attachments, operating as described, so as to effect a continuous and uninterrupted operation of the process, without stopping to charge or discharge the matter under treatment.

Fourth, the combining and arranging the vessel F and the apparatus connected with it and its contents with the washing tub or condenser and separator by means of educting pipe P and water pipe Y, operating together as described.

Fifth, desulphurizing the dust and dissolving the sulphur therein contained by subjecting the same to treatment with heated mercury, in a vessel in which the atmosphere or external air is admitted with the pulp, and uniting the fumes of the mercury with the fumes of the sulphur as they pass off within a vessel arranged, constructed, and operating as described.

Sixth, the construction of the water trough in the head of the operating trough, provided with a supply and discharge pipe for keeping cool the head and stuffing box, constructed and arranged and operating as described.

No. 45,992.—W. C. GIFFORD, Jamestown, N. Y.—*Hay Spreaders.*—January 24, 1865.—This invention consists in the employment of a reel, provided with suitable rakes, the bearings of which reel are secured to a tilting frame which is pivoted to the main frame and is adjustable at any height by means of a hook and chain in front. The reel is rotated by a belt passing around a drum upon one of the wheels, two pulleys secured to a hand lever, and a pulley upon the axle of the reel. The hand lever moves upon the same pivot as the tilting frame, and, the pulleys being secured to it, secures both the tilting of the frame and the same tension of belt at any height of the frame. The belt is tightened by means of a serrated bar and catch attached to the frame. The rakes are held in proper working position by means of chains at their centres and teeth passing through their extremities and nearly to the centre-shaft, where they are held in position by spring stops, which stops are depressed at the proper time by cams, thereby forcing the teeth and allowing the rakes to revolve and release the hay. The thills are also made adjustable in length by being secured to the main frame by loops and pins passing through holes in said loops and thills.

Claim.—First, the draught pole or thills D, provided with a series of holes *d**, and operating in combination with the pins *d*, loops *b b'*, and cross-bars *c c'*, of the frame A, in such a manner that the same can be readily taken out and changed, or lengthened or shortened, as may be desirable.

Second, the combination of the tilting frame F with the reel E and chain *h*, substantially as and for the purposes shown and described.

Third, the hand lever G in combination with the belt *i* and tilting frame F, applied as herein set forth, so that by touching the hand lever the belt and lever combined will raise or ower the frame.

Fourth, the serrated bar *m* and catch *m'*, in combination with the lever G and belt *i*, as and for the purposes specified.

Fifth, the rakes H, provided with teeth *p p** and applied to the reel E, in combination with the chains *p'*, spring stops *q*, and cam *q'*, or their equivalents, constructed and operating substantially as and for the purpose shown and described.

No. 45,993.—HORACE N. GOODRICH, Aurora, Ill.—*Grain Separator.*—January 24, 1865.—The lower edge of a movable hopper is provided with feed regulating boards that allow a large opening for the passage of cobs and large substances, and still prevent the too rapid passage of the grain. In the gang of sieves two or more are adjustable and provided with a like feed regulator. The shoes are provided with grooves running into each other so as to allow the sieves to be set at different angles without being entirely removed.

Claim.—First, providing the hopper with the feed-regulating boards B, substantially as and for the purpose specified.

Second, the stationary strip or feed-regulator E, when constructed and operating as and for the purposes set forth.

Third, the gang of series F, with two or more of the sieves in the gang adjustable, and provided with the feed-regulator E, substantially as and for the purpose herein described.

Fourth, providing the shoes G with the grooves I, so running into each other that a sieve or screen can be changed to different angles of inclination without being removed from the shoes, substantially as and for the purpose set forth.

No. 45,994.—JACOB HAEGE, Shiloh, Ill.—*Cask for Preserving Beer, &c.*—January 24, 1865.—This invention consists of a vessel resting upon a block from which rise two side pieces, having cross-bars above. The said vessel is held in place by means of screw clamps, and is closed by means of a head, which is composed of two plates, which compress between their edges a ring of elastic packing. The plates are held together by means of screw bolts which pass loosely through the upper plate, and are securely screwed into the lower one. The two plates may be drawn together, and the ring made to expand by means of a left-hand screw thread on the lower end of the piston rod. The piston may be forced down upon the liquid by means of a common screw thread upon the upper part of the piston rod and a hand nut.

Claim.—The combination of the piston G, and its screw *c*, with the plates *x x'*, and packing F, substantially in the manner herein shown and described, so that by revolving the said piston rod the periphery of the piston will be expanded or contracted, all as specified.

The employment of the ratcheted nut I, in combination with the screw piston rod G, and piston E, substantially as herein shown and described.

The construction of the plate *x'*, with cavities to receive the screws, substantially as and for the purpose herein shown and described.

No. 45,995.—JOHN HANES, Polkville, Ky.—*Ploughs.*—January 24, 1865.—In this plough the sole standard and brace are constructed of one piece, and the beam and handles attached at two single points.

Claim.—Forming the plough stock—that is, the curved front bar *b*, ground bar *a*, and brace *c*—in one piece, in combination with the manner herein described and shown of adjusting the same to the beam B, and handles R, through the intermediary of the brace P, and cross bar W, substantially as set forth.

No. 45,996.—MARK HAYS, Worcester, Mass.—*Sap Spile.*—January 24, 1865.—This invention consists of having a screw at one end for the purpose of screwing into the tree, the other end being slightly conical in form; near the centre there is a circumferential groove made for holding the bucket which receives the sap, so that the former will be close to the spile, and the sap prevented from being blown over the edge of the same, and one which will prevent the leakage of sap from the tree around the spile.

Claim.—A tubular sap spile, provided or formed with a screw to screw into the tree, a circumferential groove extending wholly or partially around the spile to receive the handle of the pail which receives the sap, and a square, *b*, to receive a wrench to screw the spile into the tree, substantially as herein shown and described.

No. 45,997.—CLARK R. HEWETT, Waupun, Wis.—*Straw Cutter.*—January 24, 1865.—In this invention two straight knives rotate in an elliptical frame moved by a cog-wheel in its hub connected with the shaft of the feed roller. A stationary knife is kept in position with a spring and wedges just outside and parallel with the feed roller.

Claim.—The combination of the rotary knives L L, hub K, braces *l l*, stationary knife E, and feed roller *c c'*, all constructed, arranged, and operating substantially as and for the purposes specified.

Also, the adjusting of the knife E, by means of the sliding wedge F, arranged substantially as and for the purpose specified.

Also, the spring *g*, when applied to the knife E, and used in combination with the rotary knives L L, substantially as and for the purpose set forth.

No. 45,998.—James H. Hoffman, New York, N. Y.—*Turn-down Enamelled Paper Collar.*—January 24, 1865.—This invention consists in the use of linen paper, and an enamel on one surface, to form the turn-down collar; that is to say, by cleaning the linen paper to open its pores and applying thereto in a warm state a composition of white wax and a trace of ultramarine. The union between the enamel and paper becomes so perfect that the paper thus prepared, after being polished on its enamelled surface, can be bent without fracturing the fibre of the paper or injuring the enamel.

Claim.—The new article of manufacture herein described, constituting a turn-down or folded collar, made and finished in the manner and for the purpose set forth.

No. 45,999.—Ellis A. Hollingsworth, South Braintree, Mass.—*Machine for Folding Paper Bags.*—January 24, 1865.—This invention consists of a machine to fold the bottom of paper bags, which is effected by stretchers to expand two sides, while the bottom is folded on itself by hinged flaps moving transversely to the stretchers.

Claim.—The combination of the stretchers K K, or their mechanical equivalents, with the leaves or flaps *g g*, the whole being so as to operate together substantially in manner and for the purpose or objects described.

Also, in combination with the two leaves *g g*, and their elevating mechanism as described, the opening bars *h h*, applied to the leaves and the posts, substantially as and so as to operate as set forth.

No. 46,000.—Frederick W. Howe, Providence, R. I.—*Rear Sight-base for Fire-arms.*—January 24, 1865.—The rear band, holding stock and barrel together, is composed of two parts or halves. Between projecting lugs on the underside of the stock, the strap loop is swivelled. Between similar ones on the top of the barrel the rear sight is hinged.

Claim.—The employment of a band made of two parts and fitted to a recess or groove in the outer surface of the barrel and stock, and secured as described, in combination with the barrel, stock, and rear-sight as described and for the purpose set forth.

Also, the combination of the said band, made in two parts and fitted to a recess or groove in the barrel and stock, and secured as described, in combination with the back strap swivel, as described and for the purpose set forth.

No. 46,001.—Edward Huber, Kelso, Ind.—*Horse Rake.*—January 24, 1865.—This invention relates to that class of rakes in which the teeth are straight, running upon the ground, and revolving to discharge the load. It consists of spring catches, which retain the rake in working position, preventing its revolution in either direction, but readily releasing them when the load is to be discharged.

Claim.—The spring or elastic plates G, attached to the handles F F, and provided with the proejctions *d e*, in connection with the plates H on the teeth of the revolving rake head D, the handles being connected by pivot bolts to pendants B on thills A, and all arranged to operate in the manner substantially as and for the purpose set forth.

No. 46,002.—F. Hullhorst, Freeport, Ill.—*Vegetable Cutter.*—January 24, 1865.—This invention consists in a cutting wheel, and changeable feed boxes, arranged with a suitable case for cutting vegetables of various kinds, for family use or for fodder.

Claim.—The combination of the changeable feed boxes H *d* I and J *f f* with the cutting-wheel D G, and casing A, all arranged to operate as specified.

No. 46,003.—F. Hullhorst, Freeport, Ill.—*Bread Cutter.*—January 24, 1865.—This invention is set forth in the claims and engravings.

Claim.—The curved slot G in the plate H, attached to box A, in connection with the knife D, arranged in connection with a slide, lever, pawl, and rack, or their equivalents, to operate the sliding bottom B, substantially as and for the purpose specified.

Also, the adjustable plate O, when applied to the device to operate in connection with the bar N, on the bolt F of the knife D, substantially as and for the purpose set forth.

Also, the guide plates C C, in combination with the knife D and slotted plate H, for the purpose specified.

Also, the adjustable bar N on the bolt F of the knife D, in connection with the cross-head M at the end of the slide I, substantially as and for the purpose set forth.

No. 46,004.—Fritz Jacob, New York, N. Y.—*Screw Propeller.*—January 24, 1865.—In this propeller the blades are hollow and consist of two leaves, which unite at their extremities, the same being bow or loop shaped.

Claim.—The screw propeller constructed with hollow bow-ended blades B, of the form herein shown and specified and for the object set forth.

No. 46,005.—Julius Johnson, Baltimore, Md.—*Apparatus for Separating Metallic Filings.*—January 24, 1865.—This invention consists of a box containing a hopper, reservoir, and a revolving apron extending from beneath the hopper to the mouth of the reservoir. A series of temporary magnets are attached to a shaft in such a manner that they may be sus-

pended directly over the surface of the apron. When the machine is in operation the filings are fed in the hopper, and from thence they pass to the apron. The apron carries them forward towards the mouth of the reservoir, and the magnets at the same time are caused to move backward and forward over the surface of the apron, collecting the filings of iron and steel. When the magnets arrive at the mouth of the reservoir, the shaft to which they are attached is caused to revolve, and carries the magnets directly over the mouth of the hopper. While the magnets are in this position the circuit is broken, and the steel and iron filings are allowed to drop into the hopper. The apron carries the filings and dirt which have not been attracted by the magnets to an aperture, where they are discharged.

Claim.—First, the combination of temporary magnets fixed upon a shaft, which is made to traverse back and forth as described, with a travelling apron for carrying the filings to be cleaned, substantially as above set forth.

Second, breaking and re-establishing the circuit between an electrical battery and a series of temporary magnets automatically, by means of the cams *m*, the vertical rack, and the lever *i*, under a mode of operation substantially such as and for the purpose above described.

Third, in combination with the aforesaid lever *c'*, rack 14, and temporary magnets *p*, the separate reservoir U and inclined partition V, for the reception of the iron and steel filings as explained.

Fourth, the sliding rock shaft *s*, the connecting rods *e*, cranks *f*, and shaft *g*, in combination with the gear-wheel 7, substantially as described.

Fifth, the combination of the segment gear-wheel 5, pinion 4, and shaft 13, for imparting intermittent rotation to the apron *c*, as explained.

Sixth, operating the rack by means of the lever *i* and the pin *h*, on the wheel 7, substantially as described.

No. 46,006.—B. H. LIGHTFOOT, Philadelphia, Penn.—*Method of Oiling Wool.*—January 24, 1865.—This invention consists in the use of refined petroleum, or other oily hydro-carbon, mixed with one-third of its weight of olein oil, or lard oil, for oiling wool.

Claim.—First, the application of prepared petroleum or other oily hydro-carbons to the oiling of the wool.

Second, the application to the oiling of wool of oily hydro-carbons, in combination with olein or lard oil, or other equivalent material.

No. 46,007.—EDWARD MACKEVITZ and WILLIAM FRANK, Milwaukee, Wis.—*Stove-pipe Damper.*—January 24, 1865.—This device is to be placed in a stove-pipe, and consists of two fixed perpendicular partitions, set parallel to each other and extending entirely across the pipe; the lower end of the upper partition extends a little way below the upper end of the lower one; two movable horizontal partitions are fixed at the top and bottom of these fixed partitions, in such a manner that they compel the products of combustion to take a circuitous course before reaching the mouth of the pipe, which pipe is heated by these means.

Claim.—First, the arrangement within a drum or a section of a stove-pipe of the fixed and movable partitions C D, and the fixed and movable partitions C' D', in two series, one above another, substantially as above described.

Second, weighting the movable partitions D D', substantially in the manner described.

No. 46,008.—T. MAYHEW, Poughkeepsie, N. Y.—*Photographic Card Mount.*—January 24, 1865.—The improvement consists in coating the card with suitable gum or mucilage; the photograph while damp from the washing bath is placed upon it and pressed, thus reversing the ordinary mode.

Claim.—A photographic card mount, the surface of which is partially or wholly covered with gum or other suitable cement, substantially as and for the purpose set forth.

No. 46,009.—E. C. MARTIN, West Liberty, Iowa.—*Horse Rake.*—January 24, 1865.—The object of this invention is to secure the teeth at such an inclination as will insure the ready performance of their work, while the supports being flexible, the angle of inclination may be changed at will. The invention will be readily understood from the claim and engraving.

Claim.—The combination with a revolving rake A B B' of the flexible metallic supports D D', attached at one end and so arranged as to move in contact with the ground behind the rake head, substantially as and for the purpose explained.

No. 46,010.—GEORGE C. MERRILL, Chicago, Ill.—*Lantern.*—January 24, 1865.—This invention consists in providing a lantern base with a circular rack, so as to operate the wick ratchet and raise or lower the wick by rotating the oil cup, without removing it from the lantern.

Claim.—First, operating the wick ratchet in a lantern or lamp by a rotary motion of the oil cup or lantern.

Second, operating the wick ratchet by the rotary motion of a rack or disk.

Third, the circular rack or disk *a*, when used for the purpose of operating a lantern-wick ratchet.

Fourth, the rack or disk *a*, in combination with the pinion *c*, and wick ratchet *d*.

Fifth, the combination of the rack or disk *a*, the pinion *c*, and ratchet *d*, with the oil cup C, and base B, all being constructed and operating substantially as set forth and specified.

No. 46,011.—JOHN A. MINOR, Middletown, Conn.—*Pocket Lantern.*—January 24, 1865.—This invention consists in a mode of constructing a pocket lantern, so that when not in use its sides, bottom, and top may be compactly folded together, and again at pleasure unfolded and adjusted for use, embracing also a receptacle for candles and matches.

Claim.—A portable or pocket lantern, constructed with folding sides and a folding top and bottom, substantially as herein shown and described.

Also, having the rear side *b* of the lantern constructed in the form of a narrow or shallow box, provided with receptacles for candles and matches, and having its bottom provided with a pivoted plate to which the candle socket is attached, and arranged so that the candle may be adjusted within the lantern or the box, substantially as herein described.

No. 46,012.—JAMES A. MCPHERSON, Troy, N. Y.—*Ballot Box.*—January 24, 1865.—This ballot box consists of three parts, the ballot receptacle, the cover, and the ballot receiver. In the cover is an opening, closed by a spring valve, operated by a lever projecting from the side of the box. Projecting from the side of the valve is a lug, which operates a lever attached to a bell. The ballot receiver is of glass, and is supported by a frame on the top of the box. The top of the receiver is closed by a cap, which screws into the top. In this cap there is an opening, under which are two inclined plates, which extend down into the box; one of these plates has an edge, against which the ballot, when folded, rests.

Claim.—First, the combination in a ballot box of the body or receptacle A^3 and the top A′, separated by a valve, constructed and applied to each other, substantially as shown.

Second, the top A′ of the ballot box, composed of an open cylinder with transparent sides, a cover S, with its valve and bell and hammer, and a ballot-retaining mouth-piece, substantially as above set forth.

Third, in a ballot box, retaining the ballot in a receiving mouth set within transparent walls, so that it cannot be withdrawn upwards, but remains suspended for inspection until pushed through the mouth by a succeeding ballot substantially as described.

Fourth, the removable mouthpiece 4, constructed so as to retain a ballot suspended in it, and prevent its withdrawal, substantially as above described.

No. 46,013.—WILLIAM MOREHOUSE, Buffalo, N. Y.—*Wood-saw Frames.*—January 24, 1865.—The object of this invention is to provide a frame that will allow a larger log of wood to be sawed before striking the cross-strain bar, and at the same time effectually strain the saw, and it consists in a strain bar that is arched towards the upper part of the frame, between which and the frame is placed a strain and screw, so that by turning the screw one way it presses upon the strain bar in such a way that it presses the ends of the frame asunder, and when turned the reverse way will release the saw from strain.

Claim.—Straining a saw blade B, by means of an arched or thrust brace E, or its equivalent, constructed and operated substantially as described.

No. 46,014.—J. W. MOYER, Cherry Valley, N. Y.—*Sofa.*—January 24, 1865.—This invention consists in having the ends of the sofa attached to the bottom of a seat by means of hinges or joints, and having said ends constructed and arranged in such a manner that they may be adjusted and secured in an upright or nearly upright position, like the permanent ends of an ordinary sofa, or be capable of being adjusted and secured in a horizontal or less inclined position, so that the sofa may be converted into either a right or left lounge, with an end more or less inclined, as desired.

Claim.—First, a sofa or lounge constructed substantially as described; that is to say, with adjustable end pieces D D, provided with sector-shaped supports F F, and a locking arrangement, consisting of a pawl G and ratchet H, so that the supporting sector shall at all times form a brace for the back and hinges, and shall form a continuous back and finish when the ends D D are vibrated from their most erect position.

Second, making the end finish on the outside of the front of the seat frame so as to cover the joint of vibration of the end pieces, a portion of the front of the latter vibrating immediately withinside of the end finish.

No. 46,015.—J. W. MOYER, Cherry Valley, N. Y.—*Sawing Machine.*—January 24, 1865.—The saw is suspended between pivoted bearings, on the upper and lower vibrating levers, and its vertical position is secured by slides, working in guides; the threaded straining rods are secured through the said rolling cylindrical bearings. To secure an equal tension upon the saw at all points of its stroke, one of its points of suspension is removed so much further than the other from the axis of vibration as is equal to the versed sine of half the arc described in its vibration.

Claim.—First, the combination of the slides M M, moving vertically in guides *f f* and *g g*, respectively, with the screw tension rods L L passing through the threaded bearings *b b′*, Fig. 1, by which the saw is preserved from lateral deflection, rendered capable of relative vertical adjustment, and means afforded for the attachment of varying lengths of saws.

Second, the herein described rolling cylindrical bearings *b b b b′*, retained by metal straps or boxes *c c c e′*, applied above and below the levers F F′, respectively, and threaded for the passage of the screw tension rods K L L.

Third, the method of hanging the saw from the upper and lower bearings of the straining

rods at *b* and *b'*, Figs. 1 and 3, so that when the levers are horizontal one of the bearings *b'* shall be in a line with the saw, which has a determinate motion by means of its guides, while the other bearing *b* shall be removed an additional distance from its centre of vibration equal to the versed sine of half the arc described by it in its vibrating motion.

No. 46,016.—J. W. MOYER, Cherry Valley, N. Y.—*Coats with Inner Sleeves.*—January 24, 1865.—This invention consists of a sleeve or cuff which buttons around the wrist and is attached to the inside of an ordinary sleeve.

Claim.—As an article of manufacture, a coat with an auxiliary sleeve or cuff B within and secured to the outer sleeve A, as described and represented.

No. 46,017.—ANDREW NARAMOR, Berlin Heights, Ohio —*Hay Rack.*—January 24, 1865.—This invention consists in the arrangement and construction of the several parts composing the rack, and the peculiar mode of attaching the same to the bolster.

Claim.—The construction and arrangement of the bolster C and pieces F, in combination with the rack, as and for the purpose set forth.

No. 46,018.—W. S. NEWTON, Norwich, Conn.—*Hay Elevating Fork.*—January 24, 1865.—This invention will be understood from the claim and engraving.

Claim.—The combination and arrangement of the bar *c*, tang or shank A, with tines and handle attached, semicircular bar D, and catch lever E, with the spring G and rope H connected with it, substantially as and for the purpose herein set forth.

No. 46,019.—A. M. OLDS, Chicago, Ill.—*Coal Screen.*—January 24, 1865.—This invention consists of a coal or ash screen made in the shape of a parallelogram, the axis being passed through it eccentrically, or through diagonal corners. The device may be placed in a box of any shape, but a six-sided one is most convenient.

Claim.—The end coal screen above described, constructed substantially as set forth, and consisting of the closed box A A', the part A being removable, and a screen D revolving eccentrically within the part A', said screen having a door at one end or side, and being so journalled on the part A' of the box as to be removable at pleasure.

No. 46,020.—J. H. PAINE, Hartford, Conn.—*Cut-off for Steam Engines.*—January 24, 1865.—A spiral cam is applied in combination with the governor and main and cut-off valves of a steam engine, so that by its action on the rod of the cut-off valve the steam is cut off instantaneously, or nearly so, and wiredrawing is avoided. The cam being in action but a short space of time, leaves the governor free during the greater part of the stroke. By the action of a latch the main cut-off valves are locked open, and thus prevented from closing the ports until the proper time arrives. By the action of a cam and pin the cut-off valves are disconnected simultaneously and allowed to move in the same or in opposite directions, as occasion may require.

Claim.—First, the spiral cam J, applied in combination with the governor and with the main valve C, and cut-off valve D, substantially as and for the purpose set forth.

Second, the sliding pin *g* and hinged latch *e*, in combination with the valves C D and cam J, constructed and operating substantially as and for the purpose described.

No. 46,021.—GEORGE R. PERCY, New York, N. Y.—*Composition for Rendering Barrels Impervious to Oil, &c.*—January 24, 1865.—This invention consists of a composition made by dissolving one pound of borax in three gallons of water, over a fire, to which are added five pounds of shellac. When this is dissolved, either glycerine, molasses or honey is added, or glue previously dissolved in water. The pores of the wood, of which the barrels are made, are completely saturated with a soluble silicate, after which this composition is applied.

Claim.—Invention for coating barrels and other vessels to contain oils and fats; is a composition composed of water, borax and shellac, in about the proportions specified, with the addition of a small quantity of glycerine, molasses, honey or glue.

Also, the process of the previous saturation of the wood with soluble silicate, in combination with the coating of the barrel or vessel with the above-described composition.

No. 46,022.—GEORGE R. PERCY, New York, N. Y.—*Compound of Condensed Milk and Uncrystallized Sugar.*—January 24, 1865.—This invention consists in combining with the ordinary condensed milk, glucose or other uncrystallizable sugar, the object being the better to preserve the milk, and get also a better tasted article.

Claim.—The commingling of a quantity of uncrystallizable grape sugar with condensed milk, in the manner substantially as above described.

No. 46,023.—REUBEN H. PLASS, New York, N. Y.—*Revolving Fire-arm.*—January 24, 1865.—The cylinder of the revolver is encircled at its middle with a trunnion band within which it can freely revolve when in position, and on the trunnions of which it can be turned laterally within the frame, so as to explode the chambers. The cylinder is also provided with a hinged breech-piece.

Claim.—First, the trunnion ring C *c*, adapted to embrace the revolving part, and to allow it to be turned about on the trunnions, substantially in the manner and for the purpose herein set forth.

Second, the hinged cap or rear piece G *g*, arranged and operated substantially as herein represented and described.

Third, in combination with means for revolving the chambered part B on an axis transverse to the line of the barrel, making the face or front end of the chambered part B portion of a sphere, having its centre at the point where said transverse axis crosses the longitudinal axis, and giving a corresponding concave form to the adjacent fixed parts, all substantially as and for the purpose herein set forth.

Fourth, the convex projection G^2 on the rear face of the cap G, and the corresponding form of the recesses in the stationary part A, to serve in combination with the rotating part B, and perform the double function of a stop and an abutment for the recoil, all substantially as herein set forth.

No. 46,024.—Peter Prescott, Booneville, N. Y.—January 24, 1865.—*Composition for Varnish, &c.*—This invention consists of a composition of water, borax, shellac, isinglass and white vitriol. The water is mixed with shellac and brought to a boiling heat, when the borax is added. When all is dissolved, the isinglass dissolved in as little water as possible is added, and while cooling the white vitriol is added.

Claim.—A composition for varnishing, painting, &c., made of the ingredients herein specified, and mixed together substantially in the manner and about in the proportion set forth.

No. 46,025.—Edmund D. Reynolds and O. Bradford Reynolds, North Bridgewater, Mass.—*Combined Cultivator and Harrow.*—January 24, 1865.—This invention consists in the combination of a series of cultivator teeth or shares, with a series of rotary harrow teeth placed in the rear of the shares, and driven by the wheel or wheels of the carriage; the series of cultivator shares and the cylinder of rotary teeth being hinged respectively to the frame or carriage, so that they rest loosely upon the surface of the ground while operating, their extent of penetration being determined by their capability of movement below the plane of the draught and guide wheels of the carriage, and the movement of the carriage.

Claim.—The combination of the cultivator shares *h* and rotary harrow teeth *m*, when so arranged with respect to a carriage *a* that they are self-adjusting in their action upon the soil being cultivated, substantially as set forth.

No. 46,026.—George S. Rogers, Thetford Centre, Vt.—*Machine for Drying Paper.*—January 24, 1865.—The claim, in connection with the engraving, explains the nature of this invention.

Claim.—The said improved paper-drying machine constructed with one or more drying cylinders A B, two endless aprons R S, and sundry guide rollers and planes, arranged in manner and so as to operate substantially as described.

No. 46,027.—Seymour Rogers, Pittsburg, Penn.—*Hay Elevator.*—January 24, 1865.—This invention consists in a device for elevating hay in barns, the implement, with its load, being raised by a horse. It is more simple in construction than the ordinary hay elevator, and may be manipulated with greater facility.

Claim.—As an improvement in hay elevators, the rod D, provided with the jointed arms F F, in connection with the pointed case A, all arranged to operate in the manner substantially as and for the purpose set forth.

Also, the notches *e f* in the rod D, in connection with the spring G and the hole *a* in the cap *c*, and the eccentric H, all arranged substantially as and for the purpose specified.

No. 46,028.—Francis G. Sanborn, Boston, Mass.—*Button-hole Cutter.*—January 24, 1865.—The cutting blade is on the interior of the upper handle of the scissors, between the hand of the operator and the pivot. The cutting-block or anvil is held opposite, in a dovetail-shaped frame. This frame is held to its place by a spring outside or underneath the handle, bearing against the handle and against a ring or belt attached to the dovetail-shaped frame.

Claim.—First, a cutting-bed for cutters and punches to be applied to the shanks of scissors, secured and held adjustably on the shank by means of spring pressure, substantially as described.

Second, the use of the dovetailed or grooved frame of the cutting bed B, for holding movable blocks of horn, vulcanized or hard rubber, or gutta-percha, wood, or other substance, for a cutting surface, as above set forth, when the same is applied to the shanks of scissors, substantially as above described.

No. 46,029.—John C. Santee, Hughesville, Penn.—*Bedstead Fastening.*—January 24, 1865.—This invention consists in a method of attaching the several parts of a bedstead by means of lugs, ribs, plug grooves, and flanges, dispensing with mortises, thus rendering all parts accessible for cleaning.

Claim.—First, the lugs C and E, constructed and applied substantially as herein shown and described, to secure the parts of the bedstead together without mortises.

Second, in combination with the above the ribs R R′, for affording an additional support to the rails.

Third, the combination of the plugs K and flanges *e′*, for securing the lugs *e* within the posts, substantially as and for the purposes herein set forth.

No. 46,030.—George Escol Sellers, Sellers's Landing, Ill.—*Paper Washer for Paper Stock.*—January 24, 1865.—About a central shaft is placed an inverted conical wire-gauze drainer, and within it a similar shaped perforated water vessel, a space being left between the two. The latter cone has a central tube through which the pulp is supplied to the bottom of the drainer, whilst it is itself constantly supplied by a stream of clean water, and has also at its bottom fans to act upon the diluted pulp. The drainer and the water vessel are both caused to revolve with great velocity; the action of the fans is such as to drive the pulp by centrifugal force upwards and outwards against the drainer, and thus increase its area as it rises on an increasing diameter, and so spread the pulp thinner and thinner, until it reaches the top, where it is discharged. While thus rising, the water is distributed with great force through the perforations of the water vessel into the pulp, and forced through it and out through the meshes of the wire drainer, carrying with it large portions of non-fibrous matter.

Claim.—Washing pulp or fibre for paper stock by submitting it to the action of a centrifugal drainer, so arranged as to permit the stuff to pass over the draining surface in a gradually thinning sheet, and to be washed by a continuous stream of water passing through it, substantially in the manner and for the purpose specified.

No. 46,031.—George Escol Sellers, Sellers's Landing, Ill.—*Cane Stripper.*—January 24, 1865.—This invention consists in a cylinder filled with projecting blades or teeth. The cane is introduced between two feed rollers, and the leaves or branches are snapped off by means of the rapid motion of the teeth, as the cane is drawn through and delivered upon a table outside of the machine, while the leaves are carried under the machine.

Claim.—First, the stripping or breaking of the branches from the stems of cane or reeds, or stripping off the leaves only by blows struck by revolving arms, slats, or blades, the cane or reeds being so fed as to insure contact with the part to be struck off, substantially as specified.

Second, receiving the stripped cane upon an inclined table arranged with a stop to facilitate bundling, substantially as specified.

No. 46,032.—A. G. Shaver, New Haven, Conn.—*Eraser.*—January 24, 1865.—This invention consists in forming an eraser with a file-cut surface, in combination with a cutting or scraping edge, and also providing the same with a convex burnishing surface.

Claim.—First, an eraser constructed with a file-cut surface, in combination with a sharp-cutting or scraping edge or edges, substantially as shown.

Second, an eraser constructed with a file-cut surface, in combination with a sharp-cutting or scraping edge or edges, and a convex burnishing surface, substantially as shown and described.

No. 46,033.—Lyman Smith, Erie, Penn.—*Apparatus for Extracting Oils, &c.*—January 24, 1865.—This invention consists of a trough with a perforated bottom, directly under which is a second trough. From the bottom of the latter trough a tube provided with a stopcock extends vertically downwards, and terminates in a tank. The material to be operated upon is placed in a tank A, and the lower trough and tube E are filled with water. On opening the stopcock a vacuum is formed in the trough, and the pressure of the atmosphere forces the oil or other liquid out of the material.

Claim.—The tank A with perforated bottom B and tank C, in combination with the tube E and receiving tank F, constructed and operating substantially as and for the purpose set forth.

No. 46,034.—Henry C. Spaulding, Brooklyn, N. Y.—*Metallic Cartridges.*—January 24, 1865.—To prevent galvanic or chemical action between the metallic shell and ball, to the prejudice of the powder, the shell, particularly, is coated on its inside with collodion, as a non-conductor, and the strength of the charge thus preserved.

Claim.—A metallic cartridge coated on its interior with a non-conducting coating, substantially as set forth.

No. 46,035.—D. C. Stone, Kingston, N. Y.—*Millstone Pick.*—January 24, 1865.—This invention relates to that class of steam pumps which are constructed of thin steel plates, and are fitted in metallic heads secured to a handle, provided with openings in said heads extending entirely through it longitudinally, and having a rack at one side, in combination with a key and a lip on the inner end of the pick blade.

Claim.—The head B, provided with an opening *a* extending entirely through it longitudinally, and having a rack *c* at one side, in combination with the key E and the lip *d* on the inner end of the pick blade, substantially as and for the purpose set forth.

No. 46,036.—Levi W. Turrell, Newburg, N. Y.—*Steam Pump.*—January 24, 1865.—This invention consists in arranging both the induction and eduction valves of the pumps upon a horizontal plate, and guiding them by means of sockets projecting downwards from such plate; also in the manner of arranging the chamber of such valves, by which they are made more accessible for repairs, or removing any obstructions that may happen to lodge therein.

Claim.—First, the combination of the valves D^1 D^2 S^1 S^2, seated upon a common plate M and guided by sockets d' s'' projecting downward from the cap plates, all as herein described, to facilitate the inspection and removal and replacement of the valves.

Second, in combination with the above, disposing the several chambers of the valve chest in such a way that the movement of the piston of the pump cylinder will alternately open two of the valves and close two, in the manner and for the purpose explained.

No. 46,037.—J. S. Underhill, New York, N. Y.—*Vessel of War.*—January 24, 1865.—This invention consists in the use of armor plates, or plated annular turrets, arranged horizontally or nearly so, with their edges secured by bolts which pass through the plates vertically or nearly so.

Claim.—The combination of the horizontal plates *a a*, vertical bolt *b b'*, vertical plates *d d*, and screws *e e*, all constructed, applied, and secured in the manner and for the purposes herein specified.

No. 46,038.—Charles M. Wetherill, Lafayette, Ind.—*Method of Inking Stamps.*—January 24, 1865.—This invention consists in the use of an elastic buffer composed of glue, molasses, and glycerine, with or without insoluble powders, upon which the ink is spread evenly by means of an elastic or firm roller, the ink being afterwards transferred to the stamp by pressure.

Claim.—The use of an elastic buffer composed of glue and molasses or glycerine, or their equivalents, with or without admixture of insoluble powders, upon which coloring matters are spread with an elastic or firm roller or by other known means, and from which the aforesaid coloring matters may be taken by the pressure of a stamp thereupon and transferred to the object to be stamped.

No. 46,039.—B. C. White, Richmond, Ind.—*Fanning Mill.*—January 24, 1865.—In this invention the hopper has a hinged adjustable radially slatted or ribbed feed-board. From the rock shaft with the pitmen and connections a rotary combined with a lateral and vertical motion is given to the shoe. A loose screen receives all these motions, and an additional independent jarring motion; the height of the shoe adjustable by means of links and turning hooks. A slide running in grooves has adjustable wind boards.

Claim.—In combination with the feeding hopper, the hinged adjustable and radially slatted or ribbed feed board *k*, operating as and for the purpose substantially as set forth.

Also, the combination of the rock shaft *d* and its crank arms and the crank wheel *f*, with their several connections, to the first moving power and to the shoe, for the purpose of giving the shoe an end and side or a longitudinal and lateral motion, substantially as and for the purpose described.

Also, in combination with the shoe, the loose screen H, having a shake or jarring motion at its rear lower end, independent of but in addition to the motion it has with the shoe, substantially as described.

Also, in combination with the shoe, the adjustable wind board frame or slides, and the adjustable wind boards therein, as and for the purpose described.

Also, the hanging of the shoe by means of the wire links and turning hooks, by which it may be raised or lowered to adapt it to the blast or the character of the grain being cleaned, substantially as herein described.

No. 46,040.—Warren Wilder, Wilkinsonville, Mass.—*Shuttle for Looms.*—January 24, 1865.—The springs, both on the same side of the spindle, are so arranged that one exerts an independent pressure on the spindle-head to keep the spindle in position, while the other exerts an independent pressure on the head of the bobbin to retain it on the spindle; both are acted on simultaneously when the spindle is raised, and the bobbin is, by the act of raising, disengaged from its spring.

Claim.—The combination and arrangement of the springs *d g*, when attached to the spindle-shank *b*, with cross-pins *m* for operating the same, substantially as herein described.

No. 46,041.—S. W. Wood, Cornwall. N. Y.—*Process for Making Cast Steel.*—January 24, 1865.—This invention consists in treating pig iron in a puddling furnace in the same manner as for making wrought iron, until it takes the form of fine granular particles; it is then taken out of the furnace and allowed to cool, and is stamped and separated from the cinder by any suitable means. The decarbonized iron thus obtained is melted in a crucible with a sufficient amount of charcoal to produce steel of the desired quality.

Claim.—Making cast steel by melting decarbonized iron, prepared substantially as herein described, in connection or contact with charcoal, or other form of carbon, either with or without the use of black oxide, manganese, or flux, substantially as specified.

No. 46,042.—T. C. Wood, Augusta, Mich.—*Extension Ladder.*—January 24, 1865.—This invention consists in constructing a ladder of two parts, connected by a hinge, and arranged in such a manner that the ladder may be compactly folded for transportation, or when not required for use, or be adjusted so as to serve as a short ladder, similar to an ordinary step-ladder, and also be capable of being adjusted as a long ladder, the two parts being in line with each other. With this folding ladder there can be used a removable and adjustable platform, applied in such a manner that it may be readily removed from the ladder and applied to it and adjusted as circumstances may require, to serve as a convenient stand in packing fruit.

Claim.—The folding ladder, composed of the two parts A B, connected together as shown, in combination with the removable and adjustable platform D, all arranged substantially as and for the purpose herein set forth.

No. 46,043.—J. P. Woodbury, Boston, Mass.—*Street Steam Railway Cars.*—January 24, 1865.—This invention consists in certain improvements in the construction of what are known as dummy engines, or street steam railway cars, whereby they are enabled to run with ease and freedom around the shortest curves that ever occur in any streets or railway tracks.

Claim.—First, the combination of the boiler and engine of a locomotive with a car truck provided with a circular truck frame and anti-friction rollers, so adjusted as to be received within one end of a car, so that the truck can turn independently of the car, in the manner and for the purpose herein set forth.

Second, the combination of one end of a railway car with an independent circular locomotive car truck, when constructed in the manner and for the purpose herein described.

Third, constructing the truck I with a circular track *i*, provided with anti-friction rollers *h*, to support the forward portion of the car, and allow the truck to turn with freedom under it, substantially as described.

Fourth, the independent circular carriage of radial anti-friction rollers, to operate in combination with the top of the truck and the bottom of a railway car, substantially as described.

Fifth, connecting the car to the centre pin of the truck frame at the bottom by means of the connecting bar V, substantially as described.

Sixth, the employment of a centre pin and connecting bar to connect the top of the car with the top of the engine and boiler truck, substantially as shown in Fig. 9.

Seventh, forming the front of the passenger car concave, and the engine and boiler room convex and circular, so that the one may turn in the other, substantially as represented in Figs. 7, 8, 9, and 10.

Eighth, making the rear truck to turn on a centre pin in the rear end of the car body, in combination with the circular tracks and carriage of radial anti-friction rollers which support the car body on the truck, substantially as described.

Ninth, the anti-friction wheels *m*, to operate in combination with the revolving engine room and passenger car, substantially as described.

Tenth, so constructing and arranging the smoke and exhaust pipe as to pass through the top of the car, directly over the centre pin U, wherever the boiler is placed, so that when the truck frame turns on a curve, said pipe may also turn with freedom through the car top, substantially as described.

No. 46,044.—Elijah Young, Tuscarora, N. Y.—*Grain Separator.*—January 24, 1865.—This invention consists in joining to the shute-board, by hinges, an upper screen, adjustable vertically at its rear end, and combining with this a longitudinally adjustable discharge screen.

Claim.—First, so constructing and arranging the sieve F that it may be elevated at its rear end sufficiently to prevent any grain from passing over that end, substantially as and for the purpose set forth.

Second, connecting the sieve E to the shute-board by means of hinges, as set forth and described.

Third, in combination with the vertically adjustable sieve E, as described, the longitudinally adjustable discharging screen C, as and for the purpose set forth.

No. 46,045.—Joshua E. Ambrose, Middletown, N. Y., assignor to Sarah T. Ambrose, Passaic, N. J.—*Coal Oil Lamp and Gas Stove.*—January 24, 1865.—This invention consists of a square sheet-iron stove, to be used with a kerosene lamp, or a gas burner. having on each side an oven for baking, &c., which is surrounded on all sides, except the outside and ends, by a flue, in which the products of combustion circulate. On the top of the stove are holes in which the cooking utensils are placed, and a pan for baking may also be placed thereon. By means of dampers the products of combustion may be prevented from circulating beneath the top, and made to pass directly out of the chimney. On one end of the stove is a boiler in which to generate steam, which is conveyed off by pipes to perform various culinary operations. Pieces of mica are let into the stove in various places to expose the light and also to give a view of the interior of the ovens.

Claim.—First, the use or employment of mica in the sides, bottom, and top of the ovens, for the purpose specified.

Second, in combination with the stove, constructed as described, the use or employment of the reservoir J and tubing K, for the purpose specified.

Third, the flue B, constructed as shown, for the purpose specified.

Fourth, the use or employment of the dampers E in combination with the flue B, for the purposes set forth.

Fifth, combining with a stove, provided with the side ovens C, the flue B, for the purpose specified.

No. 46,046.—GEORGE N. BOLLES, assignor to S. W. WALKER & CO., Kalamazoo, Mich.—*Wringing Machine.*—January 24, 1865.—This invention is explained by the claims and engraving.

Claim.—First, the two frames A A′, provided with rollers C C, and connected together by the joints B B as shown, in connection with the elastic bar E, spring F, and set screw G, all arranged substantially as and for the purpose specified.

Second, the gearing *c c d d*, in combination with the two frames A A′ and rollers C C, substantially as and for the purpose set forth.

No. 46,047.—D. B. CLEMENTS, assignor to himself and D. H. NASH, Brooklyn, N. Y.—*Horse Hay-fork.*—January 24, 1865.—This invention consists in the arrangement of a link which connects the elevating fork with the hoisting mechanism, and is provided with a latch, by which it is held in position, in connection with a metallic stock or handle. A tooth is fitted to swing over the tines so as to hold the hay in place upon the tines.

Claim.—First, the arrangement of the link *c* connecting the hay-elevating fork with the hoisting mechanism, and provided with the latch 2, in combination with the metallic stock or handle, as specified.

Second, the tooth *i*, fitted to swing over the tines for holding the hay in its place on said tines, as specified.

No. 46,048.—LEMUEL S. FITHIAN, Absecum, N. J., assignor to himself and JOHN YOUNG, Joliet, Ill.—*Machine for Pulverizing the Soil.*—January 24, 1865.—This invention consists in making the cutting blades in sections, which are placed obliquely to the line of the shaft, and are so arranged that the edges of the blades are further from the shaft than the back, which prevents the friction from the uncut earth as the machine is rotated and moved forward.

Claim.—First, constructing the rotary pulverizer in sections, the cutters M of which coincide with frustums of a cone or cones, substantially as and for the purpose specified.

Second, giving the cutters M a raking position, and also an oblique position on the heads L′, substantially as and for the purpose set forth.

No. 46,049.—LEVY J. HENRY, assignor to JOSEPH BEURIME, San Francisco, Cal.—*Mode of Protecting the Surfaces of Wooden Piles.*—January 24, 1865.—This invention consists in applying to the surface of a wooden pile a coating of asphaltum, or similar material, and, while said asphaltum is still hot, sprinkling upon it sand, gravel, or earth, and then applying another coating of asphaltum, and so on until the whole is sufficiently coated. The pile may be also covered with a coating of felt, or other material, upon which the alternate layers of asphalt and sand may be applied.

Claim.—The use of alternate layers of asphaltum and sand or earth, applied to piles and other articles exposed to the action of marine insects or worms, for the purposes specified.

Also, coating or protecting piles and other articles from the action of salt water by means of asphalt applied upon sheets of felt or other material attached to said articles, in the manner and for the purposes specified.

No. 46,050.—ENOS T. HIGHAM, assignor to himself and D. HIGHAM, Philadelphia, Penn.—*Window Shade Adjuster.*—January 24, 1865.—This invention consists of a grooved screw, a nut being adapted to the same, a sliding bar, and a knob for receiving the cord of the window shade; the whole being arranged so that the cord may be under the control of the screw and nut.

Claim.—The grooved screw A and *h*, bar *e*, and the knob *f*, or its equivalent, the whole being arranged and operating as and for the purpose herein set forth.

No. 46,051.—P. C. INGERSOLL, assignor to himself and HORACE F. DOUGHERTY, Greenpoint, N. Y.—*Press.*—January 24, 1865.—The object of this invention is to facilitate the introduction of the material to be pressed into the top of the press-box, which has a follower that is operated by a screw; also to prevent the canting of the follower in the act of pressing from injuring the screw which is employed to operate said follower, and at the same time provide for elevating the follower after the pressing operation in a horizontal plane or in such manner that it shall bind or wedge itself against the sides of the press-box.

Claim.—First, elevating and depressing the follower by means of a screw shaft having its lower end fitted loosely to the follower, combined with suspension rods *g g*, substantially as described.

Second, the combination of the loosely-fitting yoke K, screw shaft F, and suspension rods *g g*, with a follower, substantially as described.

Third, providing for opening the upper end of the press-box by the employment of a laterally sliding follower, applied and operating substantially as described.

Fourth, the laterally sliding screw support or bridge beam E E′, in combination with the follower G G′ and supporting bars *a a*, substantially as described.

Fifth, the friction rollers *b b*, and bridge beams E E′, in combination with the holding down beams *a a*, substantially as described.

Sixth, the stops *i i* or their equivalents, in combination with the laterally adjustable bridge beams E E′, substantially as described.

No. 46,052.—PETER W. KINISKEN, assignor to himself and JARED G. SCOTT, Monee, Ill.—*Field Fence.*—January 24, 1865.—In this invention the adjoining ends of the boards are notched and secured, so that they will fit and lock together in two positions, forming at will a straight or worm fence.

Claim.—A portable fence, with the adjoining ends of the boards recessed and notched in the particular manner herein shown and described, so that they will fit and lock together in either position, to produce at will a straight or a worm fence as specified.

No. 46,053.—ELIAKIM MARS, assignor to himself and AUGUSTUS MARSH, Newark, N. J.—*Lamp.*—January 24, 1865.—This invention consists in the mode of attaching the deflector, button, and wick tube, so as to hold the respective parts firmly in place.

Claim.—Attaching together the deflectors *b* and the button *f* in the manner herein above specified.

No. 46,054.—CHARLES E. SNIDER, assignor to himself and THOMAS POULTNEY, Baltimore, Md.—*Method of Converting Muzzle into Breech loading Fire-arms.*—January 24, 1865.—This invention is intended to convert easily single or double barrelled muzzle-loading arms into breech loaders, and consists in providing means for tilting and locking the barrels, through a lug-bar screwed to the barrel or barrels and the lever trigger guard.

Claim.—First, the lug-bar C attached to the barrel by screws *c c c*, and provided with projections D D′ for the pivoting of the bar E, and lever L, to the barrel, in the manner and for the purposes set forth.

Second, the pivoted bar E, constructed and employed as described, for the attachment of the breech G of a double or single barrelled gun for converting the same to a breech loader, the said bar being provided with a projection E′ at its rear end, and an abutment E^2, fitting the inclined back of the projection I on the lug-bar C, so as to constitute, in combination with the said lug-bar, a rigid connection between the breech and barrel, while in position for firing, as explained.

No. 46,055.—JAMES WARD, assignor to himself and GARRETT A. LANS, Boston, Mass.—*Brick Machine.*—January 24, 1865.—This invention consists in a revolving mould carriage, provided with moulds and plungers to co-operate with a pair of pulverizing or preparing rollers, arranged within a box, the whole combined and arranged with adjustable scrapers, an auxiliary roller, an annular rail, a series of friction rollers, and lifters with their cams.

Claim.—The combination and arrangement of the two adjustable scrapers K L, with the preparing rollers G H, the case E, and the mould carriage A.

Also, the combination of the auxiliary roller I, its chamber N, and its adjustable scraper M, with the mould carriage A, the rollers G H, the case E, and the scrapers K L, arranged together and within the case E, substantially as specified.

Also, the arrangement of the mould wheel A, the case E, the shaft *h*, the roller I, the chamber N, and the mechanism for operating the rollers G H, and the mould carriage A.

Also, the combination and arrangement of the annular rail *d*, and the series of friction rollers *e*, with the mould carriage and the series of plungers thereof.

Also, the combination and arrangement of the series of lifters *c* and their cams B C D with the rotary mould carriage A, the rail *d*, and the series of friction wheels *c*.

No. 46,056.—E. R. HOLLANDS, Northampton Square, England.—*Machine for Punching Metal.*—January 24, 1865.—In this apparatus the punch is forced down upon the metal by the joint action of two friction rollers, which are forced between an inclined plane formed on the upper end of the punch, and another inclined, though stationary, plane formed in the framework of the machine, and a wedge-shaped bar, which is forced endwise between the two rollers. The movements of the rollers and wedge are simultaneous, though with different velocities, and are effected by screw-threads of varying pitch, cut on different portions of the shank of the wedge-bar.

Claim.—The combination of the tool holder with the movable wedge, the mechanism for moving it, the rollers and the inclines, or their equivalents, operating substantially as hereinbefore set forth.

No. 46,057.—Jules O. Methieu, Paris, France.—*Machine for Making Cords, Ropes, &c.* Patented in France February 12, 1863.—The object of this invention is to spin and wind yarns, cords, or ropes of any size, and to lay the strands with any required strain or tension.

Claim.—The arrangement of the flyer and bobbins or spools with their described intermediary connecting and operating parts, when constructed, arranged, and operating as and for the purpose herein described and represented.

No. 46,058.—Edward Payne, London, England.—*Apparatus for Measuring and Testing Spirits and other Distillates.*—January 24, 1865.—This invention consists of a frame containing the tanks, which are placed on a vibrating yoke. The distilled spirit passes first into one of the tanks, and when it has filled the said tank causes it to overbalance the empty one, when it is in turn filled, the first one being emptied automatically at the same time. The tanks are thus filled and emptied alternately; the number of times each is filled and emptied being recorded upon the dials by means of suitable mechanism. As the spirit passes through the tunnel into the tank a small quantity is retained in the sampling device, and caused to flow into the receivers. The sampling device consists of a tube, provided with valves, supported by a suitable mechanism, the valves being so arranged that at each oscillation of the tanks they will allow the sample contained in the tube to pass into the chamber and from thence into the receiver.

Claim.—In connection with a still or distillery, the combined use in one instrument of a measuring and of a sampling apparatus, substantially as herein described, whereby small quantities of the spirit that passes over or through the apparatus are retained for an after test of its proof, and beyond the reach of the operator, while the measured bulk or quantity passes through to any common receiver.

No. 46,059.—G. A. Tremeschini, Vicenza, Austria.—*Lamp.*—January 24, 1865.—This invention consists in the combination and arrangement of the copper cone and interior deflector in such a manner in relation to each other and to the outer disk, as to admit the air and highly heat it before it reaches the flame; also in the combination of three or more wicks with and within a movable tube, moving within an outer stationary tube, leaving an intervening air space; also in the mode of fitting the burner to the reservoir, and of filling the latter with oil.

Claim.—First, the arrangement of the copper cone A, and deflector T2, in relation to each other and to the disk Q, and its air openings T, for the purpose of admitting air from below the disk, deflecting it against the copper cone to be highly heated, and thence carried to supply combustion at the slot, at its upper end, as described.

Also, the arranging of the wicks *b f g* within a tube E, that is movable within an outer stationary tube B, and an intervening air space between them, as and for the purpose described.

Also, securing the heads of the lamp to the bowl by means of a conical shank on the former, and a conical socket on the latter, the two making a tight metallic ground joint, substantially as described.

Also, filling the lamp through an opening in the side of the neck thereof, by means of an instrument substantially such as described, that will flow off the excess of burning fluid beyond a given height, as described and represented.

No. 46,060.—Henry Loewenberg, New York, N. Y., assignor to himself and Emile Granier, Paris, France.—*Composition for Lining Barrels for holding Petroleum.*—January 31, 1865; antedated December 10, 1864.—This invention consists of a composition of glue, acetic acid, glycerine, and nut-gall.

Claim.—A substitute for India-rubber or composition, made of the ingredients herein specified, and mixed together in about the proportion and substantially in the manner set forth.

No. 46,061.—William Adamson, Philadelphia, Penn.—*Mode of Economizing the Manufacture of Articles of Leather.*—January 31, 1865; antedated December 29, 1864.—This invention consists in cutting from raw or untanned hides or skins, or parts of the same, pieces of about the size and form required for useful articles of tanned leather, and tanning the said pieces after they have been cut from the raw or untanned hides. It also consists in economizing the manufacture of the sole and heel pieces, and other useful articles of leather, by a saving of time, labor, and material in tanning, and by retaining the remnants, after cutting the articles from the skin, in a condition which renders them marketable.

Claim.—Cutting from raw or untanned hides or skins, or parts of the same, pieces of the size or about the size and form required for useful articles of tanned leather, and tanning the said pieces after they have been thus cut from the raw or untanned hides, as and for the purpose herein set forth.

No. 46,062.—Louis Paul Angenard, New York, N. Y.—*Process for Making Looking-glass.*—January 31, 1865.—This invention consists in applying bichloride of platinum, dissolved in alcohol, to the glass with a brush; after which, the glass is placed in a muffle or

oven and baked until it becomes a cherry color. It is then allowed to cool before coming in contact with the atmosphere.

Claim.—The chemical proportions and preparation of the solution and its application to plate glass and other kinds of glass.

No. 46,063.—ELLIS S. ARCHER, New York, N. Y.—*Manufacture of Argand Burners.*—January 31, 1865.—The tip or perforated ring, as heretofore made, is dispensed with by this method of manufacture; one part of the burner being spun or stamped from sheet-brass so as to fit the casting, and the other part being turned to a gauge so as to fit exactly inside the first; the edge of the first is then spun tightly over the edge of the second.

Claim.—The making of an argand burner in the manner described, thus dispensing with the tip or perforated ring, as heretofore made.

No. 46,064.—JOSEPH W. BARTLET, New York, N. Y.—*Sewing Machines.*—January 31, 1865.—In this machine the rocking looper shaft receives its backward sliding motion from an adjustable cam on its rear end, whence it is returned by a spring. The adjustable sleeve on this shaft, with its projection, operates and varies the feed. There is also provi sion for an upper feed, by means of the presser foot and its connections.

Claim.—First, the combined sliding and rocking movement of the looper or under needle rod or shaft *i*, when arranged and actuated substantially as set forth.

Second, the adjustable sleeve or lever *o*, when constructed and operated as and for the purposes set forth.

Third, the sliding and rocking looper or under needle rod or shaft *i*, the adjustable sleeve or lever *o*, the cam or lever *u*, and pin or projection *z*, when combined substantially as set forth.

Fourth, the sliding or rocking looper or under needle rod or shaft *i*, the cam or lever *u*, pin or projection *z*, and feed bar *s*, when combined substantially as set forth.

Fifth, the presser foot *e*, cam *x*, (as shown and described in Fig. 7, sheet 2,) and sliding and rocking rod or shaft *i*, when combined substantially as set forth.

No. 46,065.—SAMUEL BAXENDALE, South Malden, Mass.—*Machine for Surface Sizing Wadding, &c.*—January 31, 1865.—In this machine the upper reticulated metallic apron is so situated as to exert a pressure upon the sized bat as it passes over the cylinder for the purpose of producing the adhesion of the fibres by means of the sizing. The blast pipe is for the purpose of detaching the bat from the apron. The other features are sufficiently explained by the claim.

Claim.—First, the combination of the rotary cylinder F, having pin points or other rigid projections on its periphery, with the rotary brush D, or its equivalent, from which the pins or projections of the said cylinder receive the sizing to sprinkle it upon the bat or web by centrifugal force, substantially as herein specified.

Second, the deflector I, in combination with the cylinder F, substantially as and for the purpose herein described.

Third, the reticulated or perforated metallic endless aprons E E′, in combination with a device for sprinkling the sizing upon the bat or web, substantially as and for the purpose herein set forth.

Fourth, the employment, in combination with two perforated or reticulated endless metallic aprons E E′, operating together as herein described, of a blast pipe M, or other equivalent device, for delivering a blast of air applied within one of said aprons, substantially as and for the purpose herein set forth.

No. 46,066.—THEODORE BERGNER, Philadelphia, Penn.—*Instrument for Cutting Photographs.*—January 31, 1865.—This invention consists of a die-punch, worked by a lever from below two metal plates, perforated in the form required for the photograph, the photograph being placed between the plates with the face upwards.

Claim.—The described instrument for cutting out photographs, with its punch A, die B, and guide plate C, operated as set forth, and are relatively so arranged as to facilitate accurate adjustment of the picture to be cut out, substantially as specified.

Also, in combination with the described instrument, the use of gauges *b* and *o*, substantially as and for the purpose specified.

No. 46,067.—ALPHEUS P. BLAKE, Milton, Mass.—*Centrifugal Ventilator.*—January 31, 1865.—This invention consists of a revolving ventilator for chimney tops, revolving on an axis, set at one end in an iron rod, bent over the apparatus, and fastened at the ends to the chimney, and another in a step in a frame in the chimney. In the upper part of the ventilator are V-shaped rings, attached to the top and second plates, which, being acted on by the wind, cause the ventilator to revolve. The top and second plates are closed. The edge of the second extends beyond the circle in which the wings are placed, and from this point incline towards the chimney at a small angle. Under this plate is a third, nearly parallel with an orifice in the centre, of corresponding size, with an exit pipe. The smoke passes out through the exit pipe and the said orifice and between the two plates. There are several

vertical partitions between the plates, extending from the outer edges of the plates to the edge of the orifice in the lower plate.

Claim.—First, the arrangement of the fans or blowers of the exhaust wheel.

Second, encasing the fans or blowers at the top and bottom.

Third, the combination and arrangement of the fans, disk, and wheel, as shown in section No. 2, all of which substantially as described and for the purpose set forth.

No. 46,068.—ISAAC W. BOWERS, Ovid Centre, Mich.—*Stave Machines.*—January 31, 1865.—The object of this invention is to slice and at the same time saw the staves to the exact length, and consists in a machine for slicing staves from a block, by attaching two adjustable circular saws, which, as soon as the stave is sliced off, the saws will cut to the desired length, it being held in place by two circular springs until the next succeeding stave is cut.

Claim.—The combination of the saws H H and springs M M, applied to a stave-cutting machine, to operate in the manner substantially as and for the purpose herein set forth.

No. 46,069.—BARCLAY BROWN, Byberry, Penn.—*Apparatus for Evaporating Saccharine Liquids.*—January 31, 1865.—This invention consists in so arranging the sectional grates, on wheels or on endless bands, that each section can be readily withdrawn from the furnace without removing the other grates, and also in placing the sections on hooks, so that they may be raised or lowered, and thus be made to approach or recede from the evaporating pan, the hooks being operated by means of levers and rods.

Claim.—First, a grate made in sections, which can be moved both in a horizontal and in a vertical direction, substantially as and for the purpose described.

Second, the hook frames D D′ D″ and levers E E′ E″, arranged with sectional grates C C′ C″ and handles F F′ F″, or their equivalents, in the manner and for the purpose substantially as set forth.

No. 46,070.—WILLIAM E. BROWN, Boston, Mass.—*Portable Gravitating Coal Sifter.*—January 31, 1865.—This device is composed of three sieves, arranged one above the other, and all inclined sufficiently to insure the charge rolling down from them. The upper and lower sieves incline the same way, and the ashes or other fine substance that pass through them fall directly into a receptacle beneath. The middle sieve is inclined in a direction opposite to that of the other two, and the charge falls upon the lower sieve and from thence into another receptacle. Under the middle sieve is a close shelf, which prevents the ashes from falling directly down. This shelf has the form of a double incline, so that the ashes are turned aside and conducted into the ashes receptacle.

Claim.—The combination with a series of inclined sieves or screws of one or more deflectors, composed of inclined surfaces, throwing the ashes out of the path of the sifted coal into the ash-box, substantially as herein described.

No. 46,071.—GEORGE R. BURDON, Waltham, Mass.—*Adhesive Fastening for Papers.*—January 31, 1865.—This invention consists in providing pieces of leather or cloth coated on one side with mucilage, and cut in such a form as to interlock when two are placed opposite to each other on loose sheets of paper, where they may be permanently fastened by an ordinary pin.

Claim.—Locking or joining together loose sheets or pieces of paper by means of a hinged binding, composed of pieces of leather or cloth, united by means of a pin, or locked into each other, as set forth.

No. 46,072.—WILLIAM BURNET, Providence, R. I.—*Newspaper File.*—January 31, 1865.—This invention consists of a rod enclosed in the grooved side of a cylinder, where it is held by a spiral spring at one end and a conical plug on the other end.

Claim.—The single rod, with a longitudinal groove or recess to receive the back of the folded sheets—the cord or wire shutting into the groove, and attached at one end to the spiral spring contained in the handle, and the other attached to the conical-shaped knot fitting the counter sink in the top of the rod, all made and operating substantially as set forth, or their mechanical equivalents.

No. 46,073.—JOHN H. BURNS, Clinton Station, N. J.—*Pumps.*—January 31, 1865.—This invention consists of two horizontal cylinders, forming an obtuse angle; in this angle a crank revolves, the shaft of which is stepped below, and ascends vertically to a pinion and gearing. This crank operates two piston rods, one moving in each of the horizontal cylinders, carrying a globular plunger, at its extremity. The water is admitted into the remote end of each of the horizontal cylinders, where there is a valve, and is forced up one of the legs of a siphon-shaped pipe and thence through an eduction pipe, into which both currents enter and form a continuous flow. The pinion above may be operated through appropriate gearing by any desired power.

Claim.—First, the barrels A A′, arranged at angles as described, in combination with the vertical crank shaft E and common ascension pipe J, constructed and operated as and for the purpose herein shown and described.

Second, the spherical plungers B in combination with the barrels A A′ of the pump, and with the crank shaft E, and operating substantially as and for the purpose set forth.

No. 46,074.—Stephen Decatur Carpenter, Madison, Wis.—*Construction of Gunboats.*—January 31, 1865.—This invention consists in constructing gunboats and other vessels of war with a flat deck, and with sides which narrow in from the deck downwards to below the water line, and plating the deck and sides with defensive armor.

Claim.—The manner of constructing the portion of gunboats or war vessels exposed to shot, shell, or other projectiles with outward projecting angles for the sides and ends, in combination with the level deck, substantially as herein described and for the purposes set forth in the specification.

No. 46,075.—Jonathan Carter, Winchendon, Mass.—*Painting Pails.*—January 31, 1865.—This invention consists of a roller with elastic ornaments on its surface, mounted on a proper handle. The sides of the roller are made to flare in the same degree as the pails to be ornamented, so that by running the tools on a pail the lines of ornament are kept parallel with the edges.

Claim.—The conical die roll, when constructed in the manner and for the purposes substantially as set forth and described.

No. 46,076.—D. H. Chamberlain, West Roxbury, Mass.—*Hand Stamp for Printing.*—January 31, 1865.—This invention consists in placing a slot in the end of a lever bar, to facilitate the adjustment and removal of changeable dies.

Claim.—Bifurcating the outer end of the lever C so as to admit of the type block E being readily removed and replaced, in the manner substantially as set forth.

No. 46,077.—William Chesley, Cincinnati, Ohio.—*Valve Cocks.*—January 31, 1865.—In this device the hub screws down within the faucet, and a cap is screwed upon its upper end. The lower part of this hub has a central recess. When the hub is screwed up, so as to be nearly withdrawn, the screw portion of the valve stem is below the female screw of the hub, and the smooth portion of the valve revolves in and is guided by the hub during the process of guiding the valve in its seat.

Claim.—So constructing the boss G and the hub H I as to liberate the valve screw stem for regrinding, by simply screwing back said hub, which thereby becomes a fixed guide for the smooth portion of said stem, substantially as set forth.

No. 46,078.—James A. Clark, New York, N. Y.—*Machine for Washing Wool.*—January 31, 1865.—In this machine the wool is conveyed into and out of the trough by endless aprons, and passed through the same between two other endless aprons, under one of which is a bed of rollers, and over the upper of which a series of vertical beaters or stampers is arranged, one above each roller. These stampers are successively operated by a revolving shaft having thereon a set of lifters, spirally arranged. An inclined shelf under the rollers carries off the dirt as it is washed from the wool into an adjoining compartment, preventing its falling upon the lower portion of the lower apron. Provision is also made for picking the wool as discharged by means of a revolving cylinder with radially advancing and receding teeth in conjunction with a set of stationary teeth.

Claim.—The combination of the apparatus described, for conveying the wool, &c., through the reservoir, with the apparatus for washing the same, consisting of the stamps, constructed as described, acting on a roller bed or its equivalent, as and for the purposes herein set forth.

No. 46,079.—Charles Cleminshaw, Troy, N. Y.—*Filters.*—January 31, 1865.—The bottom of a close vessel being perforated, a canvas is extended thereon, by means of a hoop, which packs tightly at the sides. Sand or other suitable medium is poured thereon, and the liquid is then admitted or forced in through a pipe near the top of the vessel.

Claim.—The combination of the packing ring *c* with the close vessel A, filtering medium B, pipe C, screw *b*, and perforations *a a*, arranged and operating as and for the purposes specified.

No. 46,080.—John F. Cleu, New York, N. Y.—*Valve for Submarine Ordnance.*—January 31, 1865.—The plug, which is screwed into the wall of the gun, is composed of three parts, one screwing over and on top of each other. Between these there are two valves, which secure a vacuum in the bore of the gun after the air pump has been applied; other openings, such as muzzle and touch-hole, having been properly secured. A check-valve or rotating gate at the bottom of the plug secures the two upper valves from injury on the explosion of the charge.

Claim.—First, the plug B provided with one or more valves C C′ and a cap E, for the purpose of protecting said valves and excluding air from an exhausted cannon.

Second, the check valve C2, employed substantially as described, to protect the aperture *b* and valves C C′ from the expansive pressure of the gases within the gun.

No. 46,081.—ALEXANDER COCHARD, Port Richmond, N. Y.—*Beverage.*—January 31, 1865.—This invention consists of a mixture of sugar, vinegar, raisins, coriander seeds, and hops, to which may be added rock candy, orange peel, citric acid, and a weak infusion of peppermint. The mixture is put into a barrel, and enough water added to make thirty gallons, and the whole is stirred several times a day for four or five days. It is then strained and clarified, and put into bottles.

Claim.—The beverage prepared of the ingredients and in the manner specified.

No. 46,082.—G. F. J. COLBURN, Newark, N. J.—*Combs.*—January 31, 1865.—This invention consists in constructing the comb with a metallic back, so that the comb proper can be removed from the back in which it is fastened by a lip and a clamp screw. The metallic back which encloses the comb shuts into a handle of the same material.

Claim.—First, the combination of a movable metallic back with a comb, substantially as described, so that the comb can be readily taken out and replaced without injury to the said back.

Second, the use of a socket in one end of the metal back of a comb, in combination with a lip projecting from the end of the same, and with a clamp screw or other suitable fastening at the opposite end, substantially as and for the purpose specified.

Third, the combination of the metallic back of a comb with a handle or case of similar material, and fitting the same together, substantially as and for the purpose described.

Fourth, so constructing a comb that the comb part proper and the back may be readily deached, substantially as described.

No. 46,083.—PETER CONRAD, Dorchester, Ill.—*Combined Roller and Corn Planter.*—January 31, 1865.—This invention consists in the combination of a roller with a corn-planting device in such a manner that the two devices will operate together.

Claim.—The bar R, provided with the horizontal wheel S, and arranged substantially as shown, in combination with the roller B for the purpose herein set forth.

Also, in combination with the bar R, wheel S, and roller B, a corn-planting device, substantially as set forth.

No. 46,084.—MOSES G. CRANE, Chelsea, Mass.—*Hot-air Engines.*—January 31, 1865.—This invention consists in so arranging the main cylinder, the air pump, the air passages, and exhaust valve, that the pressure shall be the same upon both sides of the pump piston during the entire movement; this object being effected by means of pipes which connect the top and bottom of the pump with the top and bottom of the air-heating vessels. The air-pump piston is so arranged that it will complete its stroke before the completion of the stroke of the main cylinder piston, which is consequent upon the stroke of the air pump so completed.

Claim.—In hot-air engines the arrangement of the main cylinder, the air pump, the furnace, the air passages, and exhaust valve, so that the air-pump piston shall work with equal pressure on each side thereof, substantially as set forth.

Also, the employment of the valve *o*, in the pump piston, in connection with the regulator valve in the passage between the pump and furnace, when arranged to operate substantially as specified.

Also, so operating the pump piston in the stroke which supplies the main cylinder that said piston completes its stroke before the main cylinder piston completes the stroke which is consequent upon said supply.

No. 46,085.—JOHN DANNER, Canton, Ohio.—*Tub for Washing and other purposes.*—January 31, 1865.—The invention is fully set forth by the claim.

Claim.—In combination with a washing tub composed of staves of wood, a metallic bottom, constructed and united thereto, in the manner substantially and for the purposes described.

No. 46,086.—SAMUEL DERR, Lockhaven, Penn.—*Stump Extractors.*—January 31, 1865.—The object of this invention is to obviate the inconvenience of drawing a large stump machine among stumps standing thickly, and through ordinary gateways and lanes; also that of using such machine for the purpose of extracting small stumps, whereby trouble occurs in passing round them, and also on account of the distance the driving power has to move to produce the required result.

Claim.—The arrangement of the legs B B B B under the frame A, so that they may occupy more or less breadth of space, substantially as and for the purposes herein specified.

Also, in combination with the above, the arrangement of the cross braces M M M M and tension rods P P, so as to adapt them to the variations in the position of the legs B B B B, substantially as herein set forth.

No. 46,087.—WILLIAM DISBROW, San Francisco, Cal.—*Horseshoes.*—January 31, 1865.—This invention consists in constructing a shoe of two plates or parts, the upper one being hinged at the toe and, by means of a jointed cross-bar, at the heel, and having attached to

each part, at the toe and heel, plates projecting upwards and inwards of a curve to fit the outer surface of the hoof, which is inserted within them before they are closed upon it. By then screwing to this hinged plate the lower part or shoe proper, the former is made rigid, and caused to hold securely to the hoof.

Claim.—A horseshoe composed of the parts A A and G, the former being connected by a hinge B at their front ends, and provided with the pieces D D and heel plates E E, the latter having oblique plates F F, which enter notches or grooves made in the sides of the hoof, and the part G, secured to the parts A A by screws, the whole being constructed, combined, and arranged, either with or without the leather or other material K, substantially as and for the purpose herein shown and described.

No. 46,088.—GEORGE H. S. DUFFUS, New Orleans, La.—*Retorts for Distilling Petroleum.*—January 31, 1865.—This invention consists in making the bottom of a retort dome-shaped in its interior for distilling petroleum.

Claim.—In stills for rectifying petroleum and other oils, or producing illuminating or other oils or gases from any substances capable of treatment by heat, making the bottom of the retort with a dome or its equivalent rising therefrom up within its interior, substantially as described.

No. 46,089.—GEORGE H. S. DUFFUS, New Orleans, La.—*Retorts for Distilling Petroleum.*—January 31, 1865.—This invention consists of a short-cylindrical box, having the top and bottom perforated with holes. These holes are directly opposite each other, and are connected by short tubes, forming passages through the box for air. These tubes are made of some porous mineral substance, so that they may be pervious to gas, which flows through the walls of the tube and mixes with the air, and ascends with it to the upper part of the tube, where it is ignited. The box is supplied with gas by a pipe, and is made adjustable, so as to be moved to or from the retort, as may be required.

Claim.—First, in stills for rectifying petroleum, or in which oils, coal, or other substances are treated by heat, arranging the furnace or burner by which the heat is communicated or created, so that it and the flames or incandescent fuel can be moved near to or further away from the retort, according to the condition of the work, substantially as described.

Second, the burner or furnace I, constructed substantially as described.

Third, the combination of the pervious cones with the gas pipe *h* and the perforated plates *i* and *j*, or their equivalents, substantially as described.

No. 46,090.—GEO. H. S. DUFFUS, New Orleans, La.—*Retorts for Distilling Petroleum.*—January 31, 1865.—This invention consists in surrounding the still with a jacket of some non-conducting composition, such as plaster of Paris and wood ashes, and also in the use of steam for the purpose of cleaning the retort.

Claim.—First, in stills for rectifying petroleum and other oils or producing illuminating or other oils or gases from any substances capable of treatment by heat, covering the still with a jacket, enclosing or composed of non-conducting materials, substantially as described.

Second, the use in stills for rectifying petroleum and other oils, or for producing illuminating or other oils or gases from any substances capable of treatment by heat of steam, for the purpose of cleaning the retort, substantially as described.

No. 46,091.—HENRY W. EASTMAN, Baltimore, Md.—*Crib and Cradle.*—January 31, 1865.—This invention consists in the combination of the several devices forming a folding crib, cradle, or trundle bed, also the attachment thereto of frames for stretching a mosquito bar.

Claim.—The combination and arrangement of the hinged sides N N, rockers M M, bolts and thumb nuts L, hooks K, and metallic frame O, all constructed and arranged substantially as and for the purpose set forth and described.

No. 46,092.—A. H. EMERY, New York, N. Y.—*Obtaining Spirits of Turpentine, Oil, Rosin, and other products, from Pine Wood.*—January 31, 1865.—This invention consists in using steam under pressure to extract the resinous and other matter from pine wood.

Claim.—First, passing a current of ordinary steam over and through the wood into a condenser in the manufacture of spirits of turpentine, rosin, &c., from pine wood.

Second, in the manufacture of turpentine, rosin, &c., directly from pine wood, subjecting the steam, either ordinary or superheated, to a pressure while it is in retort, and passing therefrom into a condenser.

No. 46,093.—FELIX J. EMERY, Springfield, Ill.—*Eaves Troughs.*—January 31, 1865.—This invention consists in bending one end of the sections out of which the trough is formed, so as to form a deep narrow groove, into which the straight end of the succeeding section is forced, a packing formed of India-rubber, enclosing a stout wire, being first inserted in said groove to add stiffness, and render the joint tight. The sections are then secured together by screws or rivets.

Claim.—The eaves trough above described, as a new article of manufacture.

No. 46,094.—SAMUEL EMLEN, Philadelphia, Penn.—*Street-sweeping Machine.*—January 31, 1865.—This invention consists in attaching a brush to a vehicle, so that the brush is vibrated

by the wheels in their progress along the street. During this vibration, it also receives other motion, which tends more efficiently to cleanse the way and insure the greater durability of certain portions of the machine, and, at the same time, to avoid the dispersion of dust.

Claim.—First, the vibrating brush, having a rising and falling motion, as hereinbefore set forth.

Second, the mode of driving the said brush by means of the pinions and ratchets upon the crank shaft.

Third, jarring the brush at the extremes of its vibrations, as herein set forth and described.

Fourth, so proportioning the gearing of the machine to the diameter of the wheels and length of the brush that the same surface shall be repeatedly swept, substantially in the manner herein set forth and described.

Fifth, combining the aprons upon the flanks of the machine with a vibrating brush, having lifting and jarring motions, as described.

Sixth, attaching the brush to the vibrating beam or arm by means of springs, in the mode and with the effect described.

Seventh, the device for lifting the brush from the street pavement by the hand of the attendant without stopping the motion of the machine when said brush is vibrated and operated, substantially in the manner hereinbefore set forth and described.

No. 46,095.—CHARLES O. FARCIOT, Philadelphia, Penn.—*Canteen Plates, Cup and Funnel.*—January 31, 1865.—This invention consists in combining with a canteen one or two plates, leaving spaces between the canteen and plates for food, and also providing a funnel which secures the dishes in position, and is also useful for filling the canteen, and as a drinking cup.

Claim.—First, the combination of the valve E with the canteen G, when constructed in the manner hereinbefore specified and shown in the drawings hereto annexed.

Second, combining with the canteen G the plates H and H′, so as to form cavities for containing provisions between the said plates and canteen body, the funnel A, and bag or cover B, in the manner and for the purposes hereinbefore set forth and specified.

No. 46,096.—J. ALBERT ESHLEMAN, Philadelphia, Penn.—*Neck-tie Holders.*—January 31, 1865.—This invention consists in the employment of a plate so formed as to press its two extremities within the fold of the collar near the front button, and to carry a coiled spring on its inner side below the button, which spring passes over the bottom, and making a purchase thereon, the neck-tie passes once around the centre part of this plate, between it and the spring loop, to be tied in front.

Claim.—The plate or holder A, arranged for the reception and removal of a ribbon or tie passing around the central part of the plate, and between it and the spring, and for confinement to the collar, all as set forth.

No. 46,097.—FRED. W. FLIEDNER, New York, N. Y.—*Manufacture of Boxes.*—January 31, 1865.—This invention consists in using veneers of wood cemented together across the grain, as a cheap substitute for pasteboard.

Claim.—The use in the manufacture of boxes of sheets of wood prepared substantially as described, as substitute for the sheets of pasteboard now used in the manufacture of paper boxes.

No. 46,098.—ARTHUR FOLSOM, New York, N.Y.—*Coffer Dam.*—January 31, 1865.—In the ordinary method of making coffer-dams, two or more rows of piles properly hooped and shod with iron, are driven around the site of the proposed work a sufficient distance apart to admit the bracing requisite for strength, and to provide space for a quantity of clay or other puddling material for the prevention of leakage. When the coffer-dam thus constructed is of large size, the bracing of the sides thus exposed over their entire length to a pressure that cannot otherwise be adequately provided for, on account of the inconvenience and sometimes the impossibility of admitting anything within the interior line of piles for that purpose, involves an expense in construction which has often been greater than the cost of material and labor. The object of this invention is to provide a coffer-dam that is free to a great extent from these objections, and it consists in making it of wrought or sheet iron, stiffened and strengthened to the degree required by means of corrugations or angle iron ribs, and provided with appliances for adapting it to the irregularities of the bottom upon which it may be used.

Claim.—The coffer-dam, constructed and operated substantially in the manner described.

No. 46,099.—L. A. FOULLEY, Boston, Mass.—*Apparatus for Cutting Photographs.*—January 3, 1865.—This invention consists in enclosing the pattern commonly used in cutting photographs in a frame hinged on one side, and clamped or hooked on the other, so that the paper and pattern are immovably held together.

Claim.—The apparatus herein described for cutting photographic pictures, passe partou frames, &c., arranged and operating substantially as described.

No. 56,100.—H. E. GIBBON, of Brooklyn, N. Y.—*Safety Guard for the Hammers of Fire-arms.*—January 31, 1865.—This invention relates to that class of guards designed to prevent the accidental discharge of fire-arms; and it consists in providing the hammer with a toothed or ratchet arc, into which a spring pawl engages, and thereby firmly holds up the hammer from striking. A projection at the end of the arc trips back the pawl so as to throw its spring off from a shoulder, when the hammer is drawn back to full-cock, thus leaving it entirely free to fall; in doing so this same projection, striking the tail of the pawl, resets its spring on its shoulder so as to put it in condition again to engage with the ratchet arc when the hammer is raised.

Claim.—First, the combination with the hammer of a gun of a toothed rack and spring detent, for holding the hammer locked in certain positions, substantially as above described.

Second, setting the detent for engagement with the rack, and also throwing it beyond the path of the rack by means of the same dog *d*, substantially as above described.

No. 46,101.—WILLIAM F. GOODWIN, New York, N. Y.—*Mounting Hand Mortars.*—January 31, 1865.—The rear end of the mortar is extended as a hollow sleeve, having no trunnions or cheeks. The support consists of a stake fitting into this sleeve with an elastic disk or spring interposed between the end of the stake and the base of the mortar. A slot in the stake, and a pin passing through it and the sleeve, allows play for the recoil.

Claim.—First, constructing a mortar with a hollow sleeve projecting from its base instead of trunnions or cheeks, substantially as above described, for the purpose of receiving the elastic cushion or any equivalent spring, and the end of a stake, as above set forth.

Second, the combination of the slot E and pin D with the aforesaid mortar A, sleeve B, and spring C, as and for the purposes specified.

No. 46,102.—JAMES J. GORMAN, Cincinnati, Ohio.—*Dead Centre Lift.*—January 31, 1865.—The object of this invention is to prevent a crank from stopping at the dead centres, and thus to dispense with the use of a balance wheel in converting reciprocating into rotary motion. This object is accomplished by a combination of springs and auxiliary pitmen. The spring is gathered up as the crank approaches its dead centre, and throws the crank over the same through the medium of an auxiliary pitman acting on the crank at an angle of at least 45°. The mechanism can be changed so as to work in either direction by means of a suitable reversing gear.

Claim.—First, the reciprocating rod G, with tappets *b b*, working beam F, and pitman E, in combination with the pitman C and crank D, constructed and operating substantially as and for the purpose set forth.

Second, making the rod G reversible and combining it with working beams F F′, pitman E E′, and crank D, substantially as and for the purpose described.

Third, the expansion bearers *d d*, applied in combination with the spring J, pitman E, and crank D, substantially in the manner and for the purpose specified.

No. 46,103.—C. E. GRAY, New York, N. Y.—*Apparatus for Rendering Lard, Tallow, &c.*—January 31, 1865.—This invention consists of a closed tank or kettle having a jacket covering the part which comes in contact with the fire. The space contains water, which is heated so as to render the lard in the kettle. The vapors and gases which escape from the lard during the process of rendering are carried through a condenser, and afterwards through a gas purifier, or they may be conducted into the furnace and burner.

Claim.—First, making a close water jacket in combination with the tank and a part of it, and arranging said water jacket so made a part of said tank in direct communication with the furnace, so that the water jacket shall intervene between the fire and the tank and act as a means of conducting and distributing the heat from the fire to and around the fat.

Second, using the steam generated in a close tank from the constitutional water in the fat, for the purpose of aiding and controlling the escape of the noxious gases and vapors, either to a superheater for consumption in the furnace or to a deodorizer for the purpose of deodorizing them, or to a condenser for the purpose of condensing them, in the manner substantially as described for the purpose specified.

No. 46,104.—GEORGE SHAW HARWOOD, Boston, Mass.—*Machinery for Oiling Wool in Carding Machines.*—January 31, 1865.—The claim and engraving convey an intelligible idea of the nature of this invention.

Claim.—First, the means and manner herein described of oiling wool while being fed to carding or other wool-preparing machine by direct application of the oil or lubricating mixture on to either or both feed rollers, substantially as set forth.

Second, in combination with carding engines or other wool-preparing machinery of otherwise ordinary or suitable construction, a covered oil tank or cistern for supplying either or both feed rollers of said machinery with oil, whether the same is effected directly by dripping the oil upon the roll or through the intermediary of a brush, roller, or band, or the mechanical equivalent thereof.

Third, in an oiling apparatus constructed for use as an attachment to carding or other wool-preparing machine, and in which the oil is distributed to either or both of its feed rolls, the combination of an oil tank with a dipper arranged for operation substantially as set forth.

so that the oil or lubricating mixture shall be thoroughly mixed and conveyed to the feed rolls directly or through the intermediary of a brush, cylinder, or apron, substantially as described.

Fourth, the employment of a roller or rollers made of any of the vulcanizable gums, in combination with a dipper and pressure roller.

Fifth, in combination with a dipper and pressure roller, two or more rollers revolving both upon their own axes and upon an axis common to them, substantially as herein described.

Sixth, the apparatus herein described for oiling wool on the card, the same consisting of a tank extending transversely the whole width of the feed rolls of a rotary dipper and a revolving distributor, when arranged to operate as described, so as to agitate and convey the oil from the tank directly to the feed roller or rollers.

No. 46,105.—Casson Hayes, Madison, Wis.—*Orchard Ladder.*—January 31, 1865.—This invention consists in the application to a ladder of a back brace attached to the top of the side frames by swivel joints and having one bearing joint on a line with the centre of the same. Across and near the lower end of the brace there is a bar running parallel with the steps, and when not in use is fastened thereto by a button. In combination with those parts are side braces secured to the top by means of swivel joints, and near the lower end of the ladder by means of hooks and bolts.

Claim.—First, the back brace B, constructed with a single bearing point, substantially as shown.

Second, the adjustable side braces C C, in combination with the brace B, as and for the purpose set forth.

Third, securing the side braces C C by means of the hooks D and buttons *d*, as shown and described.

No. 46,106.—Antoine August Hoffman, New York, N. Y.—*Scroll Sawing Machines.*—January 31, 1865.—The object of this invention is to improve the devices for operating a scroll saw, and it consists in applying pivots or points to the adjustable centres of motion working in conical sockets or guards, and also the attachment of a spherical head to the ends of the saw working in sockets made in halves and held in place by a jam nut and screw, so that the saw can freely turn and be held in any position by a set screw through the socket bearing on the head.

Claim.—The application to scroll saw frames of the adjustable centres of motion constructed with pins or points and conical sockets and retaining guards combined substantially in the manner described.

Also, the application of the device by which the saw may be turned, consisting of a cylindrical pin with a spherical head, combined with a socket made in halves and held by a jam nut and set screw, substantially as described, for the purpose specified.

No. 46,107.—Birdsill Holly, Lockport, N. Y.—*Hot-air Furnace.*—January 31, 1865.—This invention consists of a metallic cylinder or drum enclosed in brick work; coal or wood can be burned in it; coal in the grate in the front part of the cylinder, and wood on a plate pushed forward over the grate. By drawing the plate back the wood ashes are scraped off from it by a narrow strip of metal which crosses the cylinder at the rear of the fire bed, the ashes falling into the grate and ash-pit. The flue passage, which is on a level with the grate, is separated from the body of the cylinder by a diaphragm, leaving only a narrow escape-opening near the combustion chamber.

Claim.—The combination and arrangement of the radiating cylinder A, or equivalent, fire pot B, sliding plate G, flue opening *f*, and bar *h*, substantially as and for the purposes herein specified.

No. 46,108.—Orsamus Holmes, New Lenox, Ill.—*Threshing Machine.*—January 31, 1865.—This invention consists in giving a longitudinal and tossing motion to the straw carrier, and imparting this same motion to the grain screen by levers connecting the two directly. Motion is also given to the straw shoe. Wire fingers fastened to and moved by the screen extend up beyond the straw carrier and toss the straw clear of the screen.

Claim.—The giving of a longitudinal shake and tossing motion to the straw carrier D by a pitman *b* and crank *a;* also, the connecting of the grain screen G to the carrier D through the medium of the levers E E, arranged as shown, in combination with the straw shoe F attached to the rear of the screen G, and provided with wires or rods *e e'*, substantially as and for the purpose herein set forth.

No. 46,109.—Benjamin Jackson, Trenton, N. J.—*Safeguard for Protecting Pottery Ware.*—January 31, 1865.—This invention relates to a method of protecting pottery ware during the process of burning or baking, and consists in making the cylinders in which the article of ware are placed of a series of rings, so that one ring may be fitted over the other; the article to be burned or baked being fitted in each ring, and resting on pins thereon.

Claim.—A safeguard or "sagger" to receive articles of pottery ware while being burned or baked, composed of a series of rings or frames of fire-clay so constructed or arranged that they may be fitted one over the other and receive pins to support the articles fitted within, substantially as described.

No. 46,110.—Peter H. Jackson, New York, N. Y., and Samuel Eddy, Brooklyn, N. Y.—*Windlass.*—January 31, 1865.—This invention consists of a chain drum having movable clutches so placed that the high parts are where the chain enters upon, and the lower parts where it leaves, the windlass. In addition the chain wheel has an annular space, with offsets, the better to adapt itself to the size of the chain.

Claim.—A chain wheel or windlass formed with radial ribs that are movable, substantially as specified.

Also, forming the annular space around a chain wheel with offsets C C, to better adapt the same to different sizes of chain, as specified.

No. 46,111.—Oliver A. Kelly and Estus Lamb, Slatersville, R. I.—*Steam Engine Governor.*—January 31, 1865.—This invention consists in the employment of a revolving screw rod, to form the connection between the governor and the cut off or throttle valve, and applied in combination with an arm which extends from a rock shaft connecting with said valve, or from the valve spindle, the end of which is tapped to screw on said screw rod in such a manner that by the revolving motion imparted to said screw rod the valve is opened and closed independently of or in opposition to the action of the governor.

Claim.—First, the employment or use of a screw rod *b* screwing in the end of an arm *c*, which extends from the rock shaft or valve spindle *d*, and applied in combination with the governor and with suitable gear, substantially as and for the purpose set forth.

Second, the escapement wheel *k* and pawls *m m'* applied in combination with suitable bevel gear *e f*, screw rod *b*, and with the governor and valve gear, substantially as and for the purpose described.

Third, the shoe *r* and cam slot *b'* arranged in combination with each other and with the pawls *m m'*, escapement wheels *k*, screw rod *b*, and with the governor and valve gear, substantially as and for the purpose specified.

Fourth, making the shoe *r* in two parts which are hinged together, substantially as and for the purpose set forth.

Fifth, the tail *d** applied to the hinged shoe *r* and operating in combination with the bar *e** secured to the rock shaft *d*, substantially as and for the purpose described.

No. 46,112.—Robert Kelly, Tuscola, Ill.—*Gate.*—January 31, 1865.—This invention relates to the construction of gates where a brace is used to support the parts in connection with a perforated slide on the top thereof, held in position by means of a pin, for the purpose of preventing it from sagging.

Claim.—A gate constructed of uprights and slats and provided with an oblique or diagonal brace, one or more, a perforated slide and a pin or pins, all arranged substantially as and for the purpose herein set forth.

No. 46,113.—B. Klahr, Bernville, Penn.—*Sawing and Boring Machine.*—January 31, 1865.—This invention consists of a carriage on which the post is clamped, and is moved by a lever and governed by distancing stops which regulate the length and relative distance of the mortise holes in the posts. When used for ripping or tapering the ends of the rails, the hinged yoke is thrown over the side, and the timber supported by the carriage and an end bracket, and presented in the required oblique position to the saw, whose oscillating frame is raised so as to expose the saw through the slot in the carriage, when its services are needed.

Claim.—First, the combination of the parts by which the post is secured in position and moved to the tool, consisting of the carriage C, the yoke *b* and clamping screw *a*, with the stapled lever *c* acting in connection with the pins *d d** and stop *e*, substantially as described.

Second, the movable bracket J and forked rest *i*, in combination with the pin *j*, carriage C and saw I, constructed and operating substantially as and for the purpose set forth.

Third, the oscillating frame *r* in combination with the saw I, carriage C, and frame A, constructed and operating substantially as and for the purpose described.

No. 46,114.—Robert S. Laird, Sandwich, Ill.—*Lantern Frames.*—January 31, 1865.—This invention consists in constructing the wire guards of a lantern in two parts with hinges below and catches above, so that both sides may be turned down at pleasure to clean the globe, or in case of fracture to substitute a new one.

Claim.—The wire guards A attached at their lower ends to semicircular bars E E which are connected to the base B of the lantern by hinges or joints *a*, and attached at their upper ends to semicircular bars F F which are secured to the top C by catches G G, substantially as and for the purpose specified.

No. 46,115.—Charles Lang, Worcester, Mass.—*Machine for Making Lace Paper.*—January 31, 1865.—This invention consists in grinding off the elevated portions of embossed paper, which is accomplished by passing the paper between two rollers, one of which is covered with ground glass or emery, the other is impressed with a duplicate of the design on the paper. The grinding roller is made to revolve with the greatest velocity.

Claim.—Removing the elevated parts of embossed paper by means of an apparatus, the principal parts of which consist of two rollers, substantially in the manner and for the purpose described.

No. 46,116.—CHRISTOPHER LIDREU, Aurora, Ill.—*Cultivator.*—January 31, 1865.—This invention consists of a beam running parallel to and just over the axle, and is furnished with friction rollers. Two plough standards are attached to its ends. A slotted standard, carrying two slotted arms at right angles to it, rises from its centre. In these slotted arms are fastened two additional plough standards. Below the centre of the standards two rods work in slots, and pass through the axle to the feet of the driver, by which the ploughs are adjusted laterally. Two combined levers raise the parallel beams over the axle, and with it the four plough standards.

Claim.—The rising and falling bar E, operated by the levers L L′, and having the plough standards I I permanently attached to it, as shown, in combination with the adjustable plough standards F F, attached to said bar as described, and operated by the crank shafts *k*, all arranged substantially as and for the purpose set forth.

No. 46,117.—WILLIAM A. LIGHTHALL, New York, N. Y.—*Tubular Condensers.*—January 31, 1865.—This invention consists in the combination of two exhausting fans, for carrying a current of air, to pass through the tubes in the body of the condenser, with the tubes, division plates, and reservoir for water. The tubes are arranged in a case, and the division plates are attached to the case in such a way as to cause the water to have a largely extended run in passing through the case and around the exterior of the tubes, while the steam to be condensed or the water to be cooled passes through them with the current of air.

Claim.—First, the combination of the exhausting fans J′ J″, or their equivalent, with the tubes C and division plates *a a′ a″ a‴ a⁗*, as and for the purpose set forth.

Second, the combination of the exhausting fans J′ J″, or their equivalent, with the tube C and reservoir M, as and for the purpose set forth.

No. 46,118.—JOHN A. LLOYD, St. Paul, Minn.—*Tire-shrinking Machine.*—January 31, 1865.—By means of keys and other devices the operator is enabled to secure firmly the tire in the most advantageous position, and by means of a lever the tire may be upset without the aid of a hammer.

Claim.—First, constructing the lugs B B with horizontal and vertical key seats, so that the article to be secured may be pinched either upon its horizontal or vertical surfaces, at pleasure.

Second, in combination with the bed plate A of a machine for shortening tires the lever D, lugs B B, and keys C C, substantially as described and for the purpose set forth.

No. 46,119.—GEORGE E. LORD, Utica, N. Y.—*Spring Bed Bottom.*—January 31, 1865.—This invention consists of spiral springs placed in openings of the slats of the bed bottom, pins with disk heads passing through the springs and resting on the lower ends. The bed rests on the disk heads of the pins.

Claim.—The combination and arrangement of the spring C with the slat B, the disk-headed pin D, the cap E, substantially as and for the purpose set forth.

No. 46,120.—R. LORD and L. HUTTON, Rittenhouse, Penn.—*Doffing Apparatus for Carding Engine.*—January 31, 1865.—The object of the arrangement herein claimed is the better securing a uniform lap without the aid of a reciprocating comb, and by a continuous process, being designed as an improvement on Boyd's arrangement, as shown in patent No. 24,092.

Claim.—The carded cylinder B, carded rollers C, and plain stripping or clearing roller D, when combined with a carding engine, and arranged and operating as and for the purpose herein set forth.

No. 46,121.—F. LÜBKE, New York, N. Y.—*Folding Chair or Table.*—January 31, 1865.—This invention consists of a seat or top of flexible material, supported by a series of radiating arms hinged to a central hub, secured to the upper end of a sliding staff, in combination with hinged braces connected with the radiating arms and made to radiate from a sleeve through which the staff slides. The staff is supported by hinged legs, connected by toggle arms with a ring fitted on the lower end of the central staff.

Claim.—First, the vertically sliding staff A, with hub B, and radiating arms C, in combination with a sleeve F, braces E, hinged legs G, and toggle arms H, all constructed and operating substantially as and for the purpose set forth.

Second, the combination of the radiating arms C and braces E with a piece D of flexible material, and with legs G, substantially as and for the purpose described.

Third, the toggle arms H, in combination with the folding legs G and central staff A, applied and operating substantially as and for the purpose specified.

No. 46,122.—AZEL S. LYMAN, New York, N. Y.—*Air Pump.*—January 31, 1865.—This invention consists of an air pump, which is supported in bearings in such a manner as to have an oscillating motion. The piston is attached to a balance-wheel operated by a crank. In the lower part of the cylinder is a valve closing the air tube, and to which is attached a rod extending down from the cylinder and surrounded by a spring packing. The end of this

rod rests on an inclined plane, so situated that the ascent of the piston commences while the valve-stem is riding up the inclined plane, thus opening the valve, which, when the piston descends, is closed by the same means. The air escapes through small holes in the piston and cylinder cup.

Claim.—First, an oscillating air or vacuum pump whose valve is operated by a positive movement derived from its vibrating motions, and independent of the piston, substantially as above described.

Second, constructing and operating the valve and its stem of a vacuum pump, substantially as above described.

Third, the combination of the inclined plane J with the valve and valve-stem of an oscillating vacuum pump, substantially as and for the purpose above described.

Fourth, packing the joint around the valve-stem by means of the elastic ring *r* and the packing ring *h*, substantially as above described.

Fifth, packing the joint on the hollow journal of the pump where it unites with the air tube by means of a packing ring, substantially as above described.

No. 46,123.—WARREN LYON, New York, N. Y.—*Drilling Machine.*—January 31, 1865.—The operative parts of this drill are the same in all respects, except in their arrangement, as those described in the Lyons patent, dated September 20, 1853. The table which supports the work to be operated upon is, however, arranged in a different manner. Thus, the arm which supports the table has an eye or socket at one end which embraces a cylindrical spindle fixed in a vertical position to the upright post or framework of the machine, said arm being free to be elevated to different heights and placed in different radial planes, and which may be fixed in any desirable position by a set screw. The manner in which the table is adjusted upon the outer end of the projecting arm makes it convenient to substitute one table for another, and thus render the machine convenient for drilling metallic objects of different shapes. One table, with a clamping device attached to it for clamping nuts or square bars of various diameters, is the subject of the second clause of the claim.

Claim.—First, the arrangement, as herein shown and described, of the levers I L, drill arbor D, with weight F attached, the counterpoise M on lever L and the rod N, for the purpose specified.

Second, the projection *u* and sheath *p p* on the face or upper side of the bed plate P, in combination with the slide R′, screw S, and the adjustable arm Q, to which the bed plate is attached, all arranged substantially as and for the purpose set forth.

Third, the bracket C, with the bearings *a a* attached, when used in combination with the drill arbor D and its concomitant parts, as herein shown and described.

No. 46,124.—JOSEPH C. LYON, Auburn, N. Y.—*Testing Oil Wells.*—January 31, 1865.—The object of this invention is to ascertain throughout the entire length of the well where oil may be obtained, and to interpose above and below an oil fissure water-gas or other substance which might interfere with the flow and delivery of oil.

It also consists in the combination and arrangement of two air chambers, made flexible, with air and discharge pipes, whereby to cut off above and below the chambers, when inflated with foreign substances, and thereby allow oil to flow between the two air chambers and out of the discharge pipes.

Claim.—The combination and arrangement of two flexible air chambers with the air and discharge pipes, so that the air chambers can be placed at any point within the walls of oil wells, and there be inflated, whereby to cut off above the upper and below the lower chamber, water-gas and other substances, and thereby allow the oil to pass from a fissure between the two chambers and out of the discharge pipes, substantially as herein set forth.

No. 46,125.—ISAAC M. MILLBANK, Greenfield Hill, Conn.—*Breech-loading Fire-arm.*—January 31, 1865.—This invention is set forth in the claim.

Claim.—A new breech-loading fire-arm, combining the following elements, namely: The wedge C, rotating on a hinged arm transversely to the axis of the barrel and provided, as well as the faces on which it impinges, with cleaning grooves *e*, the front face of the breech-piece having an annular bead projecting forward into a corresponding groove in the rear of the barrel, so that by the withdrawal of the wedge the breech-piece may be freed to move to the rear sufficiently to enable the bead to clear the sides of the groove as the hinged breech-piece is rotated out of its chamber, and on being returned charged may be driven home with the bead pressing upon the elastic packing of the groove, the whole arrangement thus described working upon or contained within a frame A, which secures the barrel to the abutment.

No. 46,126.—EZRA MILLER, Janesville, Wis.—*Car-coupling and Buffer.*—January 31, 1865.—The object of this invention is to provide for connecting cars having their coupling hooks to cars of locomotives having other forms of couplers; also to construct coupling hooks partly of wood and partly of metal, in such manner as to obtain all the strength of the one and the lightness and cheapness of the other; also to so form these hooks that they will bear evenly on their stirrups and be less liable to wear away and tilt over on one side; also to provide for connecting together each one of a train of cars in such manner that the lateral jerk-

ing motion of a train and all the unsteadiness and injurious effect occasioned thereby will be effectually prevented, and at the same time the longitudinal shocks occasioned by suddenly stopping and starting a train be resisted. For the said purpose a contrivance is employed which is located in a line with the strongest part of a car body, viz., the flooring timbers.

Claim.—First, so constructing hooked-head car couplings that they are adapted to receive links and other forms of couplers and form connections therewith, substantially as described.

Second, a hooked-head car coupling which is composed of wood and metal, constructed substantially as described.

Third, bending the heads or forward portions of the shanks of coupling hooks in such manner as to give them an even bearing on their stirrups and thus prevent them from tilting laterally in consequence of wear, substantially as described.

Fourth, locating an elastic buffer in the end of the buffer beam A of a platform which is elevated so as to be brought in a horizontal plane with the bend of the car body, substantially as described.

Fifth, constructing the buffer head D′ with a square shank D, having a rounded extension D″ on its ends, substantially as described.

Sixth, preventing lateral thrust of cars in motion by means of interlocking buffer heads, constructed and operating substantially as described.

No. 46,127.—Joseph A. Miller, New York, N. Y.—*Casting Grate Bars for Furnaces.*—January 31, 1865.—This invention consists in casting the grate bars and moulding the patterns on either side of a suitable chill or core, which has a tongue on each of its edges fitting in and forming a groove on the upper edge of the grate bar when cast.

Claim.—Casting two bars simultaneously on the same core, substantially in the manner and for the purposes set forth.

No. 46,128.—Thomas Miller, Columbus, Ohio.—*Canal Scraper.*—January 31, 1865.—This invention consists in providing a scraper made movable about a pivot, so that an angle of any desirable obliquity can be presented to the current by the person operating the machine, by means of which obliquity the scraper can be guided to any part of the channel, to tear up vegetable growth or sedimentary deposit, and to allow the same to be washed off by the current.

Claim.—The combination and arrangement of the tongue with projecting footboard and parallels, whereby the movable principle is attained for the scraper, subject to the control of the operator, substantially as set forth and for the purposes specified.

No. 46,129.—Enoch R. Morrison, New York, N. Y.—*Shingle Machine.*—January 31, 1865.—This invention is designed as an improvement on the patent granted to the present patentee, November 22, 1853, and it consists in the application to a shingle machine of an elastic table, pressure plate, projections, with their operating cams for retaining and releasing a tooth-bar, together with an arrangement of jointers for jointing the shingles.

Claim.—Forming the table C of a spring plate in such a manner as to furnish an elastic surface its whole length, the same being provided with two projections *c c*, and operating in combination with the riving knife *b*, substantially in the manner and for the purpose herein set forth.

Also, the pressure plate M, made elastic by the spring *o*, in combination with the way N and tooth bar E, in such a manner that said plate will rise over the bar, but produce a pressure on the shingles in the rear, substantially as specified.

Also, the projections *k′* on the under side the of pressure plate M, which force the riven shingle to the bed plate if too short to be borne upon by the extreme end of the pressure plate M, the whole arranged as herein set forth.

Also, the arrangement of the gauge slide P, lever *v*, and cam bar Q, in combination with the tooth bar E, projection R, and cam O, to retain and release the said tooth bar in the manner substantially as herein specified.

Also, the arrangement of the bar T, provided with the cams *c′ c′* and block U, in combination with the tooth bar F and the cams V V, for retaining and releasing the said tooth bar, substantially as herein set forth.

Also, the combination and arrangement of the jointers Y, arms *h′ h′*, guides *z*, and spring or springs *g′* in such a manner that said jointers act centrally on the shingles substantially as herein set forth.

No. 46,130.—Isaac D. Myers and M. D. Wellman, Pittsburg, Penn.—*Cotton Seed Planter.*—January 31, 1865; antedated January 19, 1865.—The object of this invention is to overcome the difficulty of the cotton seed becoming matted, and clogging the machine. The hopper is vibrated in the usual manner, with a horizontal shaft running lengthwise over the centre of the hopper with a crank in its centre to which is attached an upright shaft working perpendicularly, with arms projecting therefrom for the purpose of separating the seed from the cotton.

Claim.—First, The use of a feeding rod having a finger or fingers which vibrate up and down through a suitable orifice in the bottom of the seed box, so as to feed a few seeds only at a time and that at regular intervals, substantially as described.

Second, also, in combination with the feed rod and fingers, wires so placed in that part of the rod which passes through the cotton in the feed box, for the purpose of loosening the mass of cotton seeds and separating them from each other, substantially as described.

Third, also the use of the sliding frame with or without the inclined planes, and operated substantially as described, for the purpose of supplying the cotton seed into the hopper box.

Fourth, also the use of the curved projections *r r* on either side of the hopper box, to prevent the cotton being fed too fast into the hopper box, and clogging therein, substantially as described.

No. 46,131.—FREDERICK D. NEWBURY, Hudson City, N. J.—*Rammer for Revolving Fire-arms.*—January 31, 1865.—This invention consists of a lever or rammer pivoted near its rear end, so that its connection acts as a swivel. In front of said joint is a projecting lug at right angles to the same, and which carries a pivoted arm that pushes in the ammunition, when the main rammer is used as a lever.

Claim.—The method of attaching the ramrod to the frame of the piece by the use of revolving standard S, in order to permit the employment of the same in combination with a cylinder, constructed, arranged, and operated substantially as set forth in this specification.

No. 46,132.—JOSEPH W. NORCROSS, Middletown, Conn.—*Row-lock.*—January 31, 1865.—This invention consists of a crutch for the reception of the oars which bear on a pintal, on the end of which are inclined planes, the same making the plates on which the pintals are secured give elevation or depression to the row-lock.

Claim.—The inclined planes in combination with the row-lock and pin on which the same swivels, whether the same be secured by the plate or gunwale or the row-lock, substantially as and for the purpose herein set forth.

Also, the spring catch applied in combination with the row-lock and with the pin on which it swivels, substantially as herein described, for the purpose of holding the row-lock in and prevent its coming out spontaneously.

No. 46,133.—CHARLES PARHAM, Philadelphia, Penn.—*Sewing Machine Stitch.*—January 31, 1865.—This invention relates to a machine peculiarly adapted to button-hole work. The needle has two motions to one of the shuttle, so that the latter carries its thread through only every alternate needle thread loop, and not through every loop.

Claim.—A machine-made stitch, formed by first making a loop in one thread and passing a second loop of the same thread through the first loop, and then passing a second thread through the second loop, and drawing up the slack of the threads and loops tightly in the cloth or other material as it is fed along to receive the stitches, as set forth.

No. 46,134.—A. H. PERKINS, Chicago, Ill.—*Process for Manufacturing Under-ground Pipes.*—January 31, 1865.—This invention consists in making pipes by casting prepared pitch, or other bituminous substance, between two concentric tubes of heavy fibrous paper or felt.

Claim.—Manufacturing pipe by casting prepared pitch or other bituminous substances or compounds between two concentric tubes of heavy fibrous paper or felt, or its equivalent, substantially as and for the purposes herein set forth.

No. 46,135.—CHARLES PERLEY, New York, N. Y.—*Riding or Warping Bit.*—January 31, 1865.—This invention consists of two riding bits which are grooved, the line or hawser passing around both bits in their grooves.

Claim.—The pair of grooved riding bits, formed and applied as and for the purposes specified.

No. 46,136.—LOUIS PETERSON, Baltimore, Md.—*Fastening Pockets to Billiard Tables.*—January 31, 1865.—This invention consists in constructing a pocket frame with ears in such a manner as to be easily attached and detached from the table, without disturbing the other parts.

Claim.—The peculiar construction of the metallic frame carrying the pocket, as described within, and the manner of fastening these frames to the bands of billiard tables by means of screws passing the wood-work of said bands and screwed into metallic nuts sunk into them, substantially as specified hereinbefore.

No. 46,137.—JOHN C. PFIEL, Arenzville, Ill.—*Gang Ploughs.*—January 31, 1865.—This invention consists in the arrangement of parts by which the relative position of the plough beam and draught pole are maintained, after the former has been depressed by the foot of the driver.

Claim.—The arrangement of parts by which the relative positions of the plough beam and the draught pole are maintained after the front of the former has been depressed by the foot of the driver, and consisting of the tension chain K and lever G, with its retaining rack J, the points of attachment being the draught pole B and the frame A, the whole constructed and operated as described and represented.

No. 46,138.—Anson H. Platt, Yellow Springs, Ohio.—*Lamp Burner.*—January 31, 1865.—This invention consists in first placing the wick regulator on a horizontally movable shaft, so as to regulate one or two wicks as required. A horizontally sliding elastic pin is used to fasten the chimney.

Claim.—The laterally movable wick regulator H, operating substantially as and for the purposes herein specified, whether employed for regulating one or two wicks.

Also, the horizontal sliding elastic bolt D for fastening the chimney, substantially as herein specified.

No. 46,139.—William Platt and A. G. Burnham, Greenfield, Penn.—*Hay Loader.*—January 31, 1865.—The object of this invention is to provide means, in connection with the elevator, by which the rake may be readily raised or lowered by a person upon the load. The invention will be understood from the claim and engraving.

Claim.—In combination with the elevator C, the arrangement of the rod *o* and the rocking frame *n n'*, pivoted on the bar *i* and connected to the rakes D, by which the latter are raised as may be required, substantially as described and represented.

No. 46,140.—E. L. Pratt, Boston, Mass.—*Adjustable Gun Scraper.*—January 31, 1865.—The head of the gun scraper, into which the end of the ramrod screws, carries several longitudinal spring arms surrounded by a sliding ring or collar. Each arm carries a triangular shaped scraper, capable of oscillation, or of removal and adjustment or replacement.

Claim.—So applying each scraper blade *c* that it swivels or turns upon or with respect to its spring or wire *b*, for the purpose substantially as set forth.

Also, making each scraper *c* removable for repair, substitution, or adjustment, substantially as set forth.

No. 46,141.—Charles H. Reichmann, New York, N. Y.—*Coal Oil Stove.*—January 31, 1865.—The object of this invention is to obtain a simple portable stove for burning coal oil economically, and it consists of a lamp having a sheet-metal chimney, the upper part of which is surrounded by a sheet-metal drum, on the top of which and over the top of the chimney is placed a kettle or other vessel.

Claim.—First, coal oil stove composed of one or more lamps provided with draught chimneys, and arranged in connexion with a drum, substantially as herein described.

Second, in combination with a coal oil stove constructed and arranged as above set forth, the slide or door *h* and glass *f* applied to the lower part of the draught chimney, in the manner and for the purposes specified.

No. 46,142.—Peter Riordan, Washington, D. C.—*Safety Valve Regulator.*—January 31, 1865.—The object of this invention is to guard against the liability of explosion of boilers by reason of undue pressure from insufficient action of the safety-valve, with the usual mechanical arrangements, and to indicate the amount of steam pressure exerted on the boiler, and readily reduce it when becoming excessive.

Its novelty consists in the combination of cylinders having different diameters, with piston heads, port *a'*, valve F, spring E, adjustable collars G, hollow graduated shaft D, and the apertures *d*.

Claim.—First, in combination with a cylinder formed in two parts, A A', of different diameters, the piston heads B B' when so arranged that the effective area of the head B on that side next the steam port *a* exceeds the effective area of the head B' on the side next the port *a'*, by as much as the area of the safety-valve divided by the number of times by which the length of the long arm of the safety-valve lever exceeds that of short arm.

Second, the combination of the valve F, spring E, and adjustable nut or collar G, with the hollow graduated shaft D and apertures *d*, the whole being arranged and employed substantially as and for the purpose set forth.

No. 46,143.—J. F. Rich, Chatham Run, Penn.—*Process for Manufacture of Fuller's Soap.*—January 31, 1865.—This invention consists in a soap made of the liquor in which wool and card strippings, or card strippings and other greasy waste, have been scoured, said liquor being treated with potash lye or other saponifier, additional fatty matter being added, if sufficient should not be obtained from the scouring process.

Claim.—A soap made by treating the liquor in which wool and card strippings or other greasy waste have been scoured with salt alkalies or other saponifiers, substantially in the manner herein set forth.

No. 46,144.—Samuel J. Seely, New York, N. Y.—*Press and Bulkheads.*—January 31, 1865.—This invention consists in building hollow piers of metallic tubular sections so formed that each tube or section shall be firmly locked between two tubes or sections when arranged in lines or angles to form the pier of any desired shape, according to its location. The tubes, when two or more sections are set in place, are filled with rubber, gravelling, cement, or plaster, to fully exclude water therefrom. A chamber is formed partly in each tube, which, when two tubes are united, shall truly register throughout the entire length of the tubes, and be filled with wood, plaster, or cement, to wholly prevent the passage of

water between them when in position. Into the separate sections or tubes, whether above or below the water line, are introduced lateral openings, into which is placed some transparent medium, through which may be admitted to the interior of the pier, or to any room, chamber, or division into which the whole structure may be divided, when these openings are protected by suitable fenders, in order to utilize the interior space between the walls of the pier.

Claim.—First, forming water-tight walls partly subaqueous, for piers or similar structures, of mitre-locked sections, to utilize the area they enclose, substantially in the manner described.

Second, forming sections for the construction of piers, substantially as described, so that one will firmly interlock with another and exclude the passage of water between them, as set forth.

Third, the combination, in piers or similar structures, of sections that will permit the entrance of light to the area they enclose, with suitable fenders to protect them, arranged substantially in the manner and for the purpose set forth.

No. 46,145.—SAMUEL J. SEELY, New York, N. Y.—*Car Wheel.*—January 31, 1865.—The object of this invention is to produce a strong, light, and durable car wheel, and one that will run with comparative silence; and to this end the invention consists in combining a cast metal hub with a metallic rim, by corrugated metal disks.

Claim.—First, the combination of the flanged hub with the flanged rim by means of the corrugated face plates, substantially in the manner described for the purposes set forth.

Second, the wooden disk arranged between the rim, the hub, and the face plates, substantially as and for the purposes described.

No. 46,146.—SAMUEL J. SEELY, New York, N. Y.—*Construction of Docks.*—January 31, 1865.—This invention consists of a metallic skeleton dock, composed of piles, columns, or other tubular supports, and tied by beams, guides, trusses, or cords, combined with a fender and springs to prevent injury to either the dock or vessels.

Claim.—First, the construction of a dock, lock, or other subaqueous structure exposed to the contact of vessels, having metallic tubular supports united together with beams or girders, or trusses of iron, or wood and iron combined, in combination with a fender of wood or iron, or both, combined with an elastic substance or spring interposed between the dock and fender to prevent injury to the structure from shock or pressure applied to the fender, constructed and operated substantially in the manner above described.

Second, the combination of a tank vessel or wall of iron, or iron and cement combined, having tubular supports, with a fender, and forming a dock, lock, wall, or other subaqueous structure exposed to the contact of vessels, so constructed and operating as to ease off all sudden shocks, and to be braced within the structure, substantially as above described.

No. 46,147.—SAMUEL J. SEELY, New York, N. Y.—*Rudder with corrugated surfaces.*—January 31, 1865.—This invention consists in the application of corrugated iron to the surface sides of rudders.

Claim.—Corrugating the sides of the blade of rudders, substantially in the manner and for the purposes set forth.

No. 46,148.—S. B. SEXTON, Baltimore, Md.—*Coal Scuttle.*—January 31, 1865.—This invention consists in placing a perforated metal plate by means of hinges about midway of an ordinary coal scuttle, thus dividing it into two parts, said plate serving also as a sifter for the coal. The plate is so constructed with flanged sides that when the scuttle is used the flanges above mentioned prevent the coal from dropping over the sides of the scuttle on the floor.

Claim.—First, providing a coal scuttle with a hinged plate, which is so arranged within the scuttle as to serve as a screen for sifting coal dust and ashes, or as a shield for preventing lumps of coal from escaping over the sides of the scuttle during the act of replenishing the fire.

Second, constructing the hinged plate A with flanged sides, substantially as described.

No. 46,149.—H. M. SHAW, Tremont, Sandusky county, Ohio.—*Machines for Cutting Staves.*—The knife frame is attached by pitmen to the wrists of cranks, which receive their effective motion from fly wheels whose slotted radial arms receive the said wrists, and thus cause the cranks to revolve in such a manner that, in the descent of the knife, the leverage power shall increase as the wrists gradually approach the centre of revolution of the fly-wheel shaft.

Claim.—The slotted arms *a* of the fly wheels *c c* to receive the pins E E of the cranks F F, the shafts G G of which are placed out of line with the fly-wheel shaft B, and all arranged in connection with the pitman H H, to operate the knife frame I, substantially as and for the purpose herein set forth.

No. 46, 50.—H. M. SHAW and C. B. STILWELL, Tremont, Ohio.—*Bread and Meat Slicer.*—January 31, 1865.—This invention consists in the employment of a rising and fall

ing gate, with a gauge and knife attached, the latter having, besides the rising and falling movement given it by the gate, a reciprocating movement, the gauge being adjustable, and all arranged with a feed box in such a manner that, by the turning of a shaft continuously in one direction, the article in the feed box will be cut or sliced expeditiously.

Claim.—First, the knife H, attached to a sash or gate B, having a rising and falling movement communicated to it by a crank and connecting rods or their equivalents, and the knife having an automatic reciprocating movement communicated to it from the sash or gate through the medium of the lever I and rod J from the crank or drawing shaft, substantially as and for the purpose set forth.

Second, the adjustable gauge F attached to the sash or gate B, substantially as shown, when used in combination with the knife H, and all arranged to operate substantially as and for the purpose specified.

The adjustable bottom G, in combination with the gauge F and knife H, all arranged to operate as and for the purpose set forth.

No. 46,151.—ELBRIDGE SIMS, Antwerp, N. Y.—*Clothes Dryer.*—January 31, 1865.—This invention relates to devices for holding clothes, and consists of a series of frames connected by pivots suspended from a wall and provided with arms so arranged that the whole may be expanded.

Claim.—A clothes dryer composed of a series of frames A B C. connected together by pivots or joints suspended on a wall or vertical support, and provided with bars D, all arranged substantially as described.

No. 46,152.—DWIGHT SLATE, Hartford, Conn.—*Turning Lathe.*—January 31, 1865.—This invention consists in attaching to the back shear of a lathe a horizontal guide bar, upon, and guided by which, moves a slide, attached by a connecting rod to the transverse sliding cutter carrier. By varying the angle of the axis of said guide from that of the lathe any desired taper can be given to the object turned thereon.

Claim.—The employment, in combination with the guide bar *g*, and with the adjusting screw *d*, or its equivalent, of the tool carriage of the connecting bar *f*, arranged substantially as herein set forth.

Also, the employment, in combination with the guide bar and connecting bar aforesaid of the slide *l* jointed to the connecting bar and locked to the guide bar, substantially as and for the purpose herein before specified.

No. 46,153.—A. F. SPALDING and SALMON F. SCOTT, Winchendon, Mass.—*Meat Chopping Machine.*—January 31, 1865.—A driving wheel being put in revolution imparts a continuous rotary motion to a tub which contains the meat to be cut, and also communicates to two knives which cut the meat, reciprocating alternate motions in vertical planes, so that they operate with a drawing stroke upon the meat. By means of the rotary motion of the tub, every part of the material is brought under the action of the knives.

Claim.—The improved machine constructed substantially in manner and so as to operate as described—that is to say, with the safety spring or springs *v* arranged with each of the knife carriers and its operative mechanism as described, the knife or knives being arranged to work in a rotary tub in manner as explained.

No. 46,154.—GEORGE STONE, Boston, Mass.—*Tool for Drawing Spikes.*—January 31, 1865.—In this device the jaw formed on the extremity of the handle is pivoted to and plays between two pieces of metal shaped somewhat like the letter S, the convex edge of one limb of each forming, together, a rocking fulcrum, while the opposite extremities of the S-shaped pieces have a less extended curvature, are brought more nearly together, and are consolidated into one single jaw by the interposition of a solid piece of metal between them.

Claim.—The handle or lever A, formed or provided with the jaw B, in connection with the rocker-shaped fulcra *c c*, provided with the jaw D, and having the handle or lever secured between them by a pivot bolt, substantially as and for the purpose herein set forth.

No. 46,155.—PETER SWEENY, New York, N. Y.—*Corn Sheller.*—January 31, 1865.—This invention consists in the employment of a revolving open cylinder with a helical flange, and pegs in combination with a series of hoppers situated at suitable distances apart around the periphery of the flanged cylinder in such a manner that ears of corn dropped endwise into said hoppers are brought in contact with the flange and pegs of the cylinder, and by their combined action the corn is shelled. The hoppers are composed each of three plates perforated with slots of sufficient size to admit the passage of the kernels. Two of these plates are placed in a radial, and the third in a tangential position, and the radial plates are rigidly secured to the frame, whereas the tangential plate is made yielding, so that by its action the ears are held in contact with the periphery of the cylinder while passing through the hopper.

Claim.—First, the revolving open cylinder D, with a helical flange *b*, and pegs *d*, in combination with a series of hoppers F, arranged around said cylinder and operating substantially in the manner and for the purpose herein shown and described.

Second, the perforations *g*, in the plates *c' d'*, composing the hoppers, arranged substantially as and for the purpose described.

No. 46,156.—N. S. Thomas, Painted Post, N. Y.—*Process for Making Concentrated Fluid Extracts.*—January 31, 1865.—This invention consists in grinding the drug or material to be operated upon to powder, after which it is moistened with a small quantity of the liquid, by means of which the extract is to be made. The mass is then subjected to pressure, whereby the liquid and a greater part of the soluble portions of the drug are expressed. This operation is repeated until the soluble matter is entirely exausted and a concentrated extract obtained without evaporation.

Claim.—The within described process of producing concentrated fluid extracts by bringing the crude drug gradually in contact with the desired measure of liquid to be represented by the extract, and exposing it after each application of liquid to a heavy pressure substantially as set forth, whereby extracts of uniform strength can be made and both heat and evaporation are avoided.

No. 46,157.—S. Totten, Brooklyn, N. Y.—*Apparatus for Fluting Trimmings.*—January 31, 1865.—A frame being properly arranged, two rows of heated iron rollers are so arranged that each of the upper rollers rests on and between two of the lower rollers, the fabric being laid under a lower roller and over an upper one so as to embrace nearly the whole surface of each. When the rollers have become cool the fluting is accomplished.

Claim.—A fluting apparatus consisting of a series of rods C D, and one or more frames A, arranged and operated substantially as shown and described.

No. 46,158.—Thomas Uren, New York, N. Y.—*Artificial Limbs and Hands.*—January 31, 1865.—This invention is set forth in the claim.

Claim.—The combination of the expansion and contraction cords with each other and with the artificial upper and fore-arm hinged at the elbow joint, and with the straps or equivalent thereof, for securing the artificial arm to the body, and with which the said expansion and contraction cords are attached, substantially as described, whereby the fore-arm can be lifted and bent or thrown out and straightened at the will of the person wearing it, by a simple motion forward or backward of the stump of the amputated arm.

Also, the combination of the hinged fore-arm with the balance cord and spring, substantially as described, whereby the weight of the hinged fore-arm is balanced by the said spring, and when desired can be made to hang naturally, as described, while at the same time the fore-arm, being so balanced, will greatly facilitate the motions to be imparted to the artificial arm.

Also, the combination of the expansion and contraction cords with the balance cord and spring with the hinged fore-arm, substantially as and for the purpose specified.

Also, the combination of the hinged hand, the turning wrist piece, the fore-arm, and the hinged connecting rod, substantially as and for the purpose specified.

Also, the hinged hand, the turning wrist piece, the fore-arm, and the hinged rod by which they are connected, substantially as specified, in combination with the means of connecting the said hinged rod with the fore-arm by a turning joint and spring, or equivalent adjustable connection, substantially as specified, so as to admit of turning the wrist, as set forth.

Also, the hinged fingers with the contraction cords and the spring with which the said cords are connected, substantially as described, whereby the fingers and, as an equivalent, the thumb can be contracted, as set forth, whether the said spring be located within the hand or on the arm, as set forth.

Also, the hinged fingers, the contracting cords and the spring connected therewith, in combination with the expansion finger cords, substantially as described, whereby the fingers can be opened or closed at the will of the person wearing the articial hand, as set forth.

No. 46,159.—Thomas Uren, New York, N. Y.—*Artificial Arms and Hands.*—January 31, 1865.—This invention is explained by the claim.

Claim.—Combining the fore-arm, which is hinged at the elbow, to the upper artificial arm with a cord attached to the back of the fore-arm and below the elbow-joint, and which passes over a guide roller mounted in the fore-arm and near the lower part thereof, and thence through the back of the upper arm and attached to the strapping at or near the back, substantially as described, thus enabling me to produce an artificial arm for an upper amputation, which, by a single connection, will enable the person wearing it to move the arm at will, as described.

Also, the spring arm or lever which projects to the outside of the fore-arm, so as to be operated by bearing against any resisting object, substantially as described, in combination with the jointed fingers and the expansion and contraction cords, substantially as and for the purpose specified.

No. 46,160.—Robert G. Vassar, Poughkeepsie, N. Y.—*Blueing Paste.*—January 31 1865.—This invention consists of a composition of bi-carbonate of soda, indigo paste, and acetic acid.

Claim.—The peculiar combination of the above ingredients, forming a more economical and perfect blueing than any now in use.

No. 46,161.—GEORGE W. WALKER, Lowell, Mass.—*Chest-expanding Suspenders.*—January 31, 1865.—The suspenders are perpendicular behind, reaching up nearly as high as the shoulders, where a transverse belt connects them, and is continued over each shoulder and thence down to the waistband in front. Another transverse belt connects the perpendicular parts behind midway between the upper belt and the waistband, and is continued under the arm to unite with the upper belt in front of the shoulder. The upper transverse belt is divided over the shoulder so as to permit the joint of the clavicle and the humerus to move freely within or beneath the opening thus formed.

Claim.—The openings V V, in the shoulder pieces D D, of chest-expanding suspenders when made and applied substantially as herein described and shown and for the purpose set forth.

No. 46,162.—JONATHAN WALTON, Brooklyn, N. Y.—*Making Corrugated Funnel Spout.*—January 31, 1865.—This invention consists in corrugating a piece of sheet metal of a suitable shape, bending it around a fluted tapering mandrel and then compressing the two between a pair of fluted or corrugated dies to give the spout the shape required.

Claim.—The process of making corrugated funnel spouts by first crimping the flat plate between corrugated plates E E, and afterward turning it around a longitudinally corrugated mandrel and pressing it thereon between corrugated dies, all as hereinbefore described.

No. 46,163.—JEFFERD L. WEAVER, Orange, Mass.—*Making Bonnet Binding.*—January 31, 1865.—This invention consists in weaving binding in strips of any desired length. The pieces forming the warp are selected of unequal lengths and new pieces added by adjusting the squared ends together and holding the newly added pieces in position by cords attached to them, which cords hold weights in suspense at their other ends, and thus keep the strips up to the desired places until made secure by the woof of the binding. This process is applicable to looms of any description adapted to weaving the material.

Claim —The above described continuous bonnet binding, the same being produced by arranging the warps or strands alongside of and so as to lap by and on one another, as explained, holding each strand in place by means of strings and weights until woven into place, and finally connecting the warps by a filling or weft woven into them substantially as described

No. 46,164.—HENRY WEBSTER, Beetown, Wis.—*Gang Plough.*—January 31, 1865.—This invention consists in placing one or more ploughs upon a jointed frame carried on wheels, and raised or lowered by means of a rack and pinion, and the ploughs guided to or from the land by a segment and pinion.

Claim.—First, the employment or use in a mounted gang plough of an oblique adjustable axle so arranged as to admit of the ready adjustment of the wheels for giving the ploughs more or less land, substantially as set forth.

Second, the frame H, applied to or connected with the draught pole A, by means of a joint in connection with the racks and toothed segments, when applied to gang ploughs, substantially as set forth.

No. 46,165.—THOMAS WELHAM, Washington, D. C.—*Steam Engine.*—January 31, 1865.—This invention consists in the use of two cylinders, having in each a right and left hand screw, so arranged that the threads meet in the centre, at which point the steam is admitted, and from which point it passes to either end of the cylinder, where it exhausts into the other cylinder, in which it returns to the centre, where an aperture is provided for its escape to the atmosphere. The screws are geared, and upon the shaft of one a pulley is placed for the purpose of transmitting power to any machinery to be driven.

Claim.—Placing one, two, or more right and left hand screws in the cylinders, as herein described, on the inside or outside of a steam or gas boiler, so as to receive and discharge the steam or gas, substantially as and for the purposes set forth.

No. 46,166.—THOMAS WELHAM, Washington, D. C.—*Universal Shafting.*—January 31, 1865.—This invention consists in a revolving shaft made of flexible material so as to operate in various positions or at any curve for the purpose of driving machinery of all kinds.

Claim.—A revolving shaft made of flexible material so as to operate in various positions or any curve, in the manner and for the purposes set forth.

No. 46,167.—THOMAS WELHAM, Washington, D. C.—*Hydraulic Brush.*—January 31, 1865.—This invention consists in the combination of a revolving brush with a water wheel attached to the nozzle of the hose, for washing windows, &c., the force of the water causing the wheel to revolve and spray the water through and around the brush.

Claim.—The arrangement and combination of the revolving brush and the revolving water wheel attached to the point of a water spout or hose, as herein described and for the purposes set forth.

No. 46,168.—H. W. WILCOX, Columbus, Penn.—*Folding Bucket.*—January 31, 1865.—The invention is fully set forth in the claim.

Claim —A folding pail or bucket composed of a rim constructed of a number of parts B, connected together by joints and having a flexible water-proof substance attached to them to form the body of the pail or bucket, and the rim having a jointed handle C attached, all constructed and arranged substantially as set forth.

No. 46,169 —DAVID WOLF, Lebanon, Penn.—*Reaping Machine.*—January 31, 1865.—This invention consists in constructing the hinged platform of the machine with a joint, or joints, in the length thereof, and parallel with the line of its hinged connection to the finger bar, in such manner that by springing the joint upward and suddenly returning it, so as to bring the parts of the platform again into line, the grain will be thrown from the platform upon the ground.

Claim.—A platform for reapers, composed of two or more parts connected by a joint or joints, and arranged to operate in the manner substantially as herein shown and described.

No. 46,170.—ALONZO WOOD, Henrietta, N. Y.—*Harvesters.*—January 31, 1865.—This invention relates to the arrangement of means for adjusting the height of the reel, while the machine is in motion, to adapt the same to the length of the straw upon which it is operating, as explained by the claim.

Claim.—Adjusting the reels of harvesters so as to adapt them to the inequalities of height of the straw in a field of grain by means of the arms G G, hand wheel N, chains or cords M M, or equivalent, and pawl lever P, the whole so arranged that the driver can operate the same without stopping the machine, substantinlly as herein set forth.

No. 46,171.—ENOS D. WOOD, Utica, N. Y.—*Steam Boilers.*—January 31, 1865.—This invention consists in providing within the ordinary steam dome of a boiler an additional dome or pipe, open at the bottom but closed at the top, and perforated throughout its length with small holes, through which the steam passes to the outer dome, from which it passes to the engine. The object of this inner dome, with its perforations, is to extract from the steam any water that may be held in suspension by it, and any foreign substances that may be carried up to it by the steam in consequence of priming in the boiler, or from any other cause.

Claim.—The domes A C, or their equivalent, constructed and arranged in combination, substantially as described, for the uses and purposes mentioned.

No. 46,172.—ABRAHAM WORMSER, New York, N. Y.—*Shirts.*—January 31, 1865.—The bosom being omitted in the construction of the shirt, a detachable bosom is made, with button holes around its edge or border, the shirt having corresponding buttons. The band attached to the bosom passes around the neck, and its two ends are buttoned to each other and to the shirt at the back of the neck.

Claim.—First, combining with a shirt made without a bosom a removable bosom attached around the edges to such shirt as specified.

Second, forming the neckband or band upon said bosom, to button or be attached to the shirt at the back of the neck, as set forth.

No. 46,173.—JOSEPH YATES, Mott Haven, N. Y.—*Low-water Detectors.*—January 31, 1865.—The object of this invention is to indicate in steam generators the height of water, and to give notice of its diminution to a dangerous extent, with unerring certainty. It consists also in the combination and arrangement of the float, chest, rod and lever, and also elastic diaphragm and lever.

Claim—First, the combination and arrangement of the float D, the chest C, the rod E, lever F, and the rods H H, substantially as and for the purposes set forth.

Second, the elastic diaphragm or diaphragms I, in connection with the levers F, rods H H, and the lever G, substantially as and for the purpose specified.

No. 46,174.—SAMUEL K. ABBOT, Salem, N H., assignor to JOEL D. CHAMPION, Nashua, N. H.—*Shoe Last.*—January 31, 1865.—The last is divided into two parts, the main last and the instep block, the latter of which is provided with a pin which fits into a corresponding hole in the former. The two ends of a bow spring are fastened to the main last, one on each side. In applying the instep block to the main last the spring is elongated by pressure until the block descends into its seat, when it returns by its elasticity to bind directly upon the heel of the block.

Claim.—The instep block fastener, composed of the bow spring *e* and the strap *d*, arranged with respect to one another and the remainder of the last, substantially in manner and so as to operate as described.

No. 46,175.—GEORGE N. BOLLES, assignor to S. W. WALKER & CO., Kalamazoo, Mich.—*Washing Machine.*—January 31, 1865.—This invention consists of an ordinary wash tub, set in a suitable frame and rotated by gearing, a follower being arranged in the tub, between which the clothes are placed.

Claim.—The rotating or reciprocating rotating tub G, in combination with the self-adjusting or rising and falling follower H, the guide bar J on the framing A, uprights I on the follower H, hinged bar K, and catch bar L, all arranged substantially as and for the purpose specified.

No. 46,176.—Charles F. Brand, assignor to Harris Brothers & Co., Philadelphia, Penn.—*Ears for Paint Cans.*—January 31, 1865.—This invention consists in so constructing the ears of a paint can that they may serve as a slip to confine the top to its place.

Claim.—Combining the slips *a a* with the ears D D of paint cans, substantially in the manner and for the purpose above described.

No. 46,177.—W. H Burridge, Cleveland, Ohio, assignor to Adams, Jewett & Co.—*Fruit Basket.*—January 31, 1865.—This invention consists in constructing the basket or bag of two pieces of paper, all the edges of which are straight, and the angles all right angles.

Claim.—The herein-described article, when made and formed substantially as and for the purposes set forth.

No. 46,178.—Wm. F. Cochrane, assignor to himself and Warder & Child, Springfield, Ohio.—*Harvester.*—January 31, 1865.—This invention will be understood by inspection of the claim and engraving.

Claim.—First, the combination of the girder slide pieces *a a'* with the end brackets C C', and middle brackets *i*2, substantially in the manner described, for the purposes set forth.

Second, constructing the frame brackets C C' and *i*2, substantially as described, for the purpose of adapting them to either a right or left hand machine.

Third, constructing and arranging the sides A A of the frame, substantially in the manner described, so as to permit them to be reversed and shifted from one side to the other in order to change from a right to a left hand machine, or *vice versa*, as set forth.

Fourth, the combination of the trifurcated brace R with the inner shoe tongue and frame, substantially as and for the purpose described.

Fifth, the combination of the driver's seat and footboard pivoted on the post U, and connected by the rod *t* with the gauge bar *v*, as and for the purpose described.

No. 46,179.—Wm. F. Cochrane, assignor to himself and Warder & Child, Springfield, Ohio.—*Harvester.*—January 31, 1865.—This invention consists in mounting the crank shaft, which imparts motion to the cutters, in swivelling bearings and between the bars of the girder side beam in such a manner as that the frame shall protect the said shaft, while at the same time the twisting of the frame will not bind or strain the gearing. It further consists in a particular construction and arrangement of shell brackets for supporting and protecting the gearing, and also in the manner of combining the driving wheel and frame, whereby the teeth of said wheel are made to serve as a rack upon which to raise and lower the frame.

Claim.—First, mounting the crank shaft in swivelling bearings, substantially in the manner described, for the purpose set forth.

Second, the combination of the shell bracket M with the level wheel N and pinion *o*, as described, for the purpose of protecting the gearing.

Third, arranging the crank shaft between the frame timbers *a a* and within the bracket C' as and for the purpose described.

Fourth, mounting the counter shaft in the brackets I M, constructed in the manner described and for the purposes specified.

Fifth, the combination of the driving wheel, spur pinion, pinion shaft, and nut J, with the main frame, substantially in the manner described, for the purpose of raising the frame as described.

No. 46,180.—Wm. F. Cochrane, assignor to himself and Warder & Child, Springfield, Ohio.—*Harvester.*—January 31, 1865.—This invention relates to the particular manner of mounting the drive wheel in the frame, to the manner of combining the brackets which support and protect the gearing with the frame, and to the means of holding the frame at any desired elevation from the ground, as explained by the claim.

Claim.—First the combination of the driving wheel, tubular axle, sleeved radius bars, and main frame, substantially as and for the purposes described.

Second, the shell brackets I I', constructed and combined substantially as and for the purpose as described.

Third, the combination of the shell brackets and main frame, substantially as and for the purpose set forth.

Fourth, the combination of the radius bars, shell brackets, and panels and ratchets, substantially as described, for the purpose of holding the frame at any desired elevation, as set forth.

No. 46,181.—Wm. F. Cochrane, assignor to himself and Warder & Child. Springfield, Ohio.—January 31, 1865.—*Harvester.*—A brief description of this invention other than that contained in the claim is impracticable.

Claim.—First, a vibrating slotted link or guide, which embraces the arm or stall of a vibrating sweep rake, and positively controls the movements of the rake, substantially in the manner and for the purpose described.

Second, the combination of an automatic rake with a vibrating slotted link or guide and gravitating stop latch, substantially in the manner described, for the purpose set forth.

Third, the combination of the rake arm with the swivelling socket or collar *f*, substantially as described, for the purpose of varying the angle of the rake teeth relatively to the platform, as specified.

Fourth, mounting a vibrating slotted link or guide, which positively controls the movements of an automatic rake, on an adjustable stud *g'*, as described, for the purpose of varying the path of the rake, as set forth.

Fifth, the combination of an automatic vibrating sweep rake, a vibrating guide, and a tension brake, for the purposes both of diminishing the force with which the rake strikes the gavel and of holding the rake down upon the gavel when raking off.

Sixth, driving an automatic rake through the centre of the driving wheel and from the outer side thereof, substantially as and for the purposes described.

Seventh, the combination of the pinions *d d*1 *d*3 *d*4, as described, for the purpose of varying the speed of the rake, as set forth.

Eighth, a tension brake to regulate the force with which an automatic vibrating sweep rake drops upon the platform.

No. 46,182.—Wm. F. Cochrane, assignor to himself and Warder & Child, Springfield, Ohio.—*Harvester.*—January 31, 1865.—This invention consists in combining a swan-shaped, vertical frame, of particular construction, with the horizontal frame, whereby a strong, rigid frame is secured, and at the same time one which can readily be raised or lowered without deranging the gearing.

Claim.—The combination with the horizontal main frame of a harvester of a swan-shaped vertical frame C, substantially in the manner described, for the purposes set forth.

No. 46,183.—Wm. F. Cochrane, assignor to himself and Warder & Child, Springfield, Ohio.—*Harvester.*—January 31, 1865.—This invention relates to the particular arrangement of gearing for operating the rake, and to the manner of mounting the gearing in an independent, rigid frame or bed plate, which is so secured to the main frame as to admit of a ready removal or attachment of the same.

Claim.—First, the combination of the spur wheel E, idle wheel F, and pinion G with the crank shaft G', substantially in the manner described, for the purpose set forth.

Second, mounting the rake gearing in the detachable frame or bed plate H, as described, for the purpose set forth.

No. 46,184.—Charles Deavs, assignor to E. P. Archer and George Pancoast, New York, N. Y.—*Portable Lanterns.*—January 31, 1865.—This invention consists in the combination of a tube, provided with a spring to receive a candle, with a case having a glass front, in such a manner that the tube may be shoved entirely within the case when the lantern is not in use, and so adjusted, by drawing out the tube, that it may serve as a handle when the lantern is in use. There is a cover over the glass, which protects it when not in use, and is capable of being raised so as to serve as a reflector when the lantern is in use.

Claim.—The combination of the candle tube E with the lantern case A, when the tube is arranged so as to slide within the case, and capable of being shoved entirely within it and drawn out wholly or partially from it, substantially as and for the purpose herein set forth.

No. 46,185.—Alexander W. Hall, New York, N. Y., assignor to Almon and Albert Hall, Columbus, Ohio.—*Churns.*—January 31, 1865.—The dasher in this churn is a fixture, and the body of the churn is caused to oscillate thereon.

Claim.—The fixed attachment of the dasher of a churn to a stationary support, and the suspension of the tub, box, barrel, or body of the churn in such relation to the stationary dasher that it and the contained milk may receive the necessary motion to produce the separation of the butter from the milk, substantially as herein described; or, in other words, a churn with a stationary dasher and a movable body, substantially as herein set forth.

No. 46,186.—Philo W. Hart, Stamford, N. Y., assignor to The Dalton Knitting Machine Company, New York, N. Y.—*Stop-motion for Circular Knitting Machines.*—January 31, 1865.—This invention is designed as an improvement on Dalton's patent, No. 43,294. The object is to ship the belt and stop the machine when the yarn is nearly all run off the bobbin. Instead of a spring lever, held within a notch in the side of the bobbin, as in Dalton's machine, the inventor uses a slide, secured to a frame beneath the bed-plate, and a pin on this slide is held by the yarn within a notch on the bobbin. When the yarn is nearly all delivered, the pin is released by it, and the centrifugal force of the revolving bobbin stand throws the slide outward and brings a pin thereon into contact with an arm which, with its connections, shifts the belt from the fast to the loose pulley.

Claim.—The movable pin or piece *c*, in combination with the slide I, or its equivalent, attached to the bobbin stand, and with a groove or recess in the bobbin, substantially as and for the purpose herein specified.

No. 46,187.—Stoughton B. Holden, assignor to himself and L. L. Holden, Woburn, Mass.—*Combined Valise and Seat.*—January 31, 1865.—This invention relates to a combined valise and seat, whereby the valise, when unfolded, may be converted into a seat, with

room to receive and hold different tools or articles required for mechanics, artists, fishermen, &c.

Claim.—A combined valise and seat, composed of two parts *a a'*, connected by hinges *b*, one part *a* being provided with a bottom or seat B, and the other part with an internal lid *c*, and both parts supported by legs D when the device is used as a seat, the legs being removable, and all constructed and arranged as herein described.

No. 46,188.—W. A. HORRALL, assignor to himself and ALBERT W. CROSS, Washington, Ind.—*Brick Machines.*—January 31, 1865.—This invention consists in a mechanism which drives the moulds to the gear wheel on the pressure roller shaft, so that the mould and periphery of the pressure roller shall move in exact unison, by which the passage is facilitated and the clay evenly pressed.

Claim.—So connecting the mechanism which drives the moulds to the gear wheel on the pressure-roller shaft that the mould and periphery of the pressure roller shall move in exact unison, by which their passage is facilitated and the clay evenly pressed, substantially as herein described and represented.

No. 46,189.—JOHN W. HUSSEY, assignor to himself and GEO. H. QUINCY, Boston, Mass.—*Machinery for Oiling Wool in Carding Machines.*—January 31, 1865.—This invention consists in a scraper, in the form of an endless belt of slats, which lies beneath the burr box, and by its motion clears the pressure roller of any adhering fibre, while the top feed roller strips the band of any fibre adhering to it and conveys it to the card.

Claim.—First, in carding or other wool-preparing machinery, and in combination with the pressure roller of an oiling apparatus of otherwise ordinary or suitable construction, an independent scraper, or its equivalent, so arranged as to keep the pressure roller clear of the wool adhering to its surface.

Second, in combination with the pressure roller of an apparatus for oiling wool as it is fed to carding or other wool-preparing machinery, an endless apron interposed between the said pressure roller and the top feed roller, and moving in the direction of the said rollers, so that the surfaces in contact move in opposite directions, substantially in the manner and for the purposes set forth.

No. 46,190.—SAMUEL JOHNSTON, assignor to himself and RUFUS L. HOWARD, Buffalo, N. Y.—*Harvesters.*—January 31, 1865.—This invention relates to that class of machines which have the finger bar arranged opposite, or nearly opposite, the tread of the drive wheel, and the gearing located within the periphery of said wheel, and it consists in a particular construction and arrangement of the parts, as defined by the claim, whereby the gearing and cutting apparatus are readily raised and lowered together, while preserving the same relation to each other, and without interfering with the free working of the machine.

Claim.—First, constructing a harvesting machine, which I call the "Great Western," with the finger beam located opposite or nearly opposite to the tread, and the gearing located mainly within the periphery of the driving wheel, and with the finger beam and gearing so arranged that both can be raised and lowered together to any desired height, and still preserve the same relation to each other and the free working of the same, all constructed and arranged substantially as set forth and for the purposes described.

Second, the standard *m m*, located within the periphery of the driving wheel, the main plate *l l* and the perpendicular line shaft *e e* for supporting the finger beam and gearing and allowing them to be adjusted to the required height, arranged substantially as described and for the purposes set forth.

Third, the perpendicular grooved line shaft, in combination with the feathered clutch, and arranged and constructed as described for the purposes herein set forth.

No. 46,191.—HORACE K. JONES, assignor to THE HART MANUFACTURING COMPANY, Kensington, Conn.—*Machine for Indicating Carpenters' Squares.*—January 31, 1865.—This invention consists in attaching the gravers to movable segmental plates or carriers fixed in the periphery of a revolving cylinder, beneath and parallel to the axis of which the blade to be marked is passed. The length of stroke of the graver is regulated by studs projecting from the periphery of the carrier plates coming in contact with an inclined surface of a guide bar, adjustable to or from the axis of said roller.

Claim.—First, the method, substantially as described, for cutting the division marks on carpenters' squares and rules.

Second, the toes *i* and yielding beds D, in combination with the gravers *a*, applied and operating substantially as and for the purpose set forth.

Third, the screw clamps *g*, applied in combination with the gravers *a*, substantially as herein specified, for the purpose of holding them in their places and to govern the depth of the cuts.

No. 46,192.—S. LOYD, assignor to himself and W. H. FREAR, Washington, D. C.—*Movable Calks and Toes for Horse Shoes.*—January 31, 1865.—These calks are formed with vertical flanges projecting from their upper surface, on both sides, the outer one having spurs

on top, turning inward to hook over the top of the shoe, the inner one having through it a pointed steel set screw, which being driven against causes an indentation in the shoe, and thereby clamps the calk tightly upon it.

Claim.—The calks B B′, constructed in the manner herein described and represented, and employed in connection with the screws C C′, in the manner and for the object specified.

No. 46,193.—BARNEY MCGINNIS, New York, N. Y., assignor to himself and REUBEN S. TORREY, Brooklyn, N. Y.—*Steam Generators.*—January 31, 1865.—This invention consists in arranging a system of high-pressure boilers in the interior of a double shell, which forms a low-pressure boiler, the two being connected together in such a manner that the inner or high-pressure one can be supplied with water from the outer or low-pressure ones. The two boilers, or system of boilers, have each an outlet pipe for steam, and the steam may be used to propel high and low-pressure engines, as it can be mingled, and all used in one engine.

Claim.—First, the system of high-pressure boilers B B′, arranged in the interior of the shell or boiler *a*, in the manner and for the purpose substantially as herein shown and described.

Second, the back flue *e*, in combination with the double-walled shell *a* and return flue boilers B, constructed and operating substantially as and for the purpose set forth.

No. 46,194.—JOHN SHIM, assignor to himself and ISAAC STEAD; said STEAD assigns his right to NICHOLAS H. GRAHAM.—Philadelphia, Penn.—*Machinery for Oiling Wool in Carding Machines*—January 31, 1865.—In this machine the oil rises in the wick by capillary attraction, and is held in suspension in the upper end of the wick, which hangs over a pipe, and may be heated if desired; the ridges of a fluted revolving roller press the ends of the wick gently and wipe out the oil; this roller then carries the oil to the surface of a plain roller, which transmits it by a gentle pressure to the wool upon the feed apron.

Claim.—In combination with a wool-oiling apparatus, raising oil from the tank by a wick or capillary attraction, for the above-described purpose.

No. 46,195.—JACOB WEBER, New York, N. Y., assignor to himself, WM. WHARTON, jr., Philadelphia, Pa., and IRA B. SNYDER, New York, N. Y.—*Knapsack.*—January 31, 1865.—This invention consists of a knapsack which is capable of being changed into a couch merely by opening it, being a light metallic frame or skeleton covered with water-proof material.

Claim.—First, constructing the frame of a knapsack with jointed and folding sides, connected to a central section C, substantially as above described.

Second, a knapsack which is capable of being turned into a couch; supporting the outer folding rails, both when it is extended and when it is folded up, by means of brackets found on the supports *c*, substantially as described.

Third, the combination with a folding knapsack, constructed substantially as above described, of a canopy and ribs *i*, as above set forth.

No. 46,196.—JEAN FRANÇOIS AUGUST AERTS and PAUL FRANÇOIS AERTS, assignors to JEAN FRANÇOIS AERTS, Antwerp, Belgium.—*Lubricator.*—January 31, 1865.—This invention consists of a lubricating box surrounding a journal, so constructed that no foreign substance, such as dust, ashes, &c., can penetrate from without, and no portion of the lubricating liquid can escape from within said box containing a reservoir of water, oil, or other liquid, which is conveyed to the rubbing surfaces by a peculiar arrangement of wheel and grooves.

Claim.—First, in combination a shaft or axle, a reservoir of water or lubricating liquids or mixtures thereof, a brass or bearing, so grooved or channelled, substantially as described, as to receive and carry water or fluid lubricating material to the rubbing surfaces, and a disk or wheel attached to and revolving with the shaft, so as to carry fluid lubricating material and supply to a brass, the combination operating substantially as set forth.

Second, in combination with an axle or shaft and a reservoir of water a channelled brass and a rotating disk and a close box, preventing the entrance of dust and the escape of water, and in which the joint between the box and the axle is closed by packing rings, applied substantially as described.

Third, in combination with a packing ring, making a joint with an axle, a concave or dishing protector attached to or making a part of a wheel or an axle, and acting substantially as described.

Fourth, in combination with a box and a reservoir of water a guard-plate or disk, making a partition between the front enclosure of the box and a water-lifting apparatus, substantially as described.

No. 46,197.—JOHN LYON FIELD, Lambeth, England—*Manufacture of Moulded Candles.*—January 31, 1865.—This invention consists in making the lower end of a moulded candle of a tapering or conical form, so that it may fit various sized sockets of candlesticks without cutting or wrapping the candle.

Claim.—A moulded candle, the lower end of which is made of a tapering form, substantially as represented and described, for the purpose set forth.

No. 46,198.—JAMES WEBSTER, Birmingham, Eng.—*Manufacture of Zinc.*—Patented in England May 18, 1864.—This invention consists in passing zinc ore through molten iron. The zinc ore and nitrate of soda, in a finely divided state, are placed in a chamber situated above an ordinary cupola furnace, such as is used in smelting iron; from this chamber the zinc ore and nitrate of soda are conducted to another chamber by means of a channel, which is provided with a feed-screw at its lower end. The chamber contains the molten iron, and communicates with the interior of the furnace by means of a passage, and also communicates with a vessel containing water by means of a pipe. The molten iron passes under the inverted bridge and escapes, and the volatilized zinc passes through a tube into the water contained in the vessel.

Claim.—Extracting zinc from its ores by causing the latter to be brought into contact with molten iron or other metal in a close vessel.

No. 46,199.—THOMAS CROSSLEY, Bridgeport, Conn., assignor to THE AMERICAN WATERPROOF CLOTH COMPANY, Brooklyn, N. Y.—*Flocked Cloth, Dyed or Printed.*—January 31, 1865.—The base is cotton, wool, silk, hemp, jute, or other material, coated with vulcanized or unvulcanized India-rubber by itself or in combination with lead, litharge, sulphur, or other material. The coating may also be gums, linseed, or other oils, varnishes, &c. The said base, after being thus coated, is covered with flocks or dust of wool, silk, cotton, fur, or other fibrous material.

Claim.—An article or fabric prepared, dyed, and printed, or either prepared, dyed, or printed, with a face of flocks of wool, silk, fur, or other material possessing the character and qualities herein set forth, as a new manufacture.

No. 46,200.—THOMAS CROSSLEY, Bridgeport, Conn., assignor to THE AMERICAN WATERPROOF CLOTH COMPANY, Brooklyn, N. Y.—*Dyeing, Printing, and Manufacturing of Waterproof Cloth.*—January 31, 1865.—This invention consists of a new and improved manufacture, the result of the process of dyeing and printing, which is the subject of a patent to the inventor.

Claim.—The process, substantially as herein before described, of preparing, dyeing, and printing goods having a surface of flocks of the character herein before described.

No. 46,201.—EDGAR B. ADAMS, ROBT. P. TRIMBLE, and HORATIO N. ADAMS, Salem, Ohio.—*Rotary Engine.*—February 7, 1865.—This invention relates to a combination of parts, consisting of an annular case made steam-tight by heads which are bolted to the ends of a ring. Within this case is another annular ring, which has radial arms extending inwards to the hub through which the shaft passes. To these arms an eccentric is fixed, which works within an elongated yoke for giving motion to the pistons, which work through slots in the revolving ring, and are pressed out against the inner periphery of the case, except where they pass the abutment placed between the revolving ring and the case, when they are withdrawn by the eccentric arranged for that purpose. The steam is admitted near the abutment behind the piston, and forces it around nearly to the abutment again, when it is exhausted through apertures formed for that purpose.

Claim.—First, the combination of an eccentric hub D, having a groove *g* formed in it, with the revolving ring B, elongated yoke A, and sliding pistons *b b'*, operating substantially as described.

Second, the application of springs *s s'* to piston rods *e e'*, which are connected to a yoke E by means of pins *f f* working in slots *i i*, substantially as described.

No. 46,202.—DAVID C. ALDRICH, Anamosa, Iowa.—*Churn.*—February 7, 1865.—This invention consists in the employment of two dashers, perforated partition plates, an air tube, and a water chamber, all arranged in such a manner as to cause butter to be rapidly produced in good condition, and to separate the butter from the buttermilk.

Claim.—The partition plates B B, perforated at their lower ends, and provided with an oblong opening *g*, in connection with the air tube H in the central compartment *e*, and the dashers D C in the compartments *d d*, all arranged to operate substantially as and for the purpose herein set forth.

Also, the concave surfaces *a** of the dashers, in connection with the upper inclined surfaces *b**, the perforated partition plates B B, and the air tube H, for the purpose specified.

Also, the water chamber *b*, in combination with the perforated partition plates B B, dashers C C, air tube H, and thermometer I, as and for the purpose set forth.

No. 46,203.—JOHN H. AMES, Baltimore, Md.—*Steam Boiler.*—February 7, 1865.—This invention relates to an arrangement of parts, by means of which a portion of the steam is suspended, and a portion used in its normal condition. It consists in the arrangement of an ordinary tubular boiler, with an additional number of tubes, a portion of which is submerged while the remaining portion pass through the steam space and superheat the steam in the portion of the boiler in which they are located. Two diaphragms are placed over the fire-box in such a manner that the steam generated in a portion of the boiler is to some extent separated from the superheated steam in the other portion, and a valve is placed in a pipe leading to

the main steam pipe to regulate the passage of the saturated steam on its way to the main pipe, where it mingles with the superheated steam.

Claim.—First, the arrangement of flues E′ E′, substantially as and for the purposes set forth.

Second, producing superheated and saturated steam in a boiler and separating these two forms of steam from each other without injuriously interrupting the water level, substantially as described.

Third, mixing together superheated and saturated steam in the steam pipe within the boiler, substantially as described.

No. 46,204.—PETER ANDREW, Cincinnati, Ohio.—*Machine for separating Grease, Lard, and Tallow from the refuse of Rendering Tanks.*—February 7, 1865.—This invention consists of a vat, provided with perforated steam pipes at its bottom and a perforated water pipe on one side at the top. Opposite this water pipe on the other side is a trough. Near the top of the vat is a screen made of separate frames and hinged together, each screen being covered with fine wire-cloth. The water and grease rise through the screen and flow into the trough, from whence they are conducted to the trap, where the water sinks to the bottom and rises again through the passages and overflows to the trough, when it is carried off by the pipe.

Claim.—First, the trap B, arranged as specified and shown, operating substantially in the manner described, for separating the grease from the water, and for the separation of liquids of unequal specific gravity.

Second, the use of wire-screens, substantially as described and set forth, for the separation of lard, tallow, or grease from the refuse or slush taken from steam-rendering tanks, and for the separation of any liquid having no affinity for water, and of less specific gravity, from any substance that is not liquid.

Third, the trough or gutter D, for the purpose of skimming the grease from the surface of the water in the vat, as specified and in the manner described.

Fourth, the perforated water pipe F, for the purpose of lifting the grease above the screens until it flows into the trough D, and for continuing the flow and driving it into the trough, substantially as described and shown.

Fifth, the bottom of the vat, formed and arranged as described and for the purpose set forth.

No. 46,205.—STEPHEN J. AUSTIN, Freeport, Me.—*Presses.*—February 7, 1865.—This invention consists of a press-box, one side of which is made movable, and is fitted in suitable grooves and connected by ropes to a windlass in such manner that by turning said windlass in one direction the movable side is thrown open and closed by turning the windlass in the opposite direction, the ropes being always taut.

The follower is operated by two levers, the inner ends of which are hinged thereto and connected to ropes or chains which extend over pulleys secured to the frame, thence down under pulleys near the inner end, and over pulleys in the outer ends of said levers, and to a windlass in such a manner that by the action of said ropes the levers are started from a horizontal position without requiring any attention from the operator. In order to take up the extra amount of chain, those used for operating the levers and followers extend over two drums geared together so as to rotate in opposite directions.

Claim.—First, the expanding press-box B, constructed substantially as and for the purpose described.

Second, the ropes or chains *d d′ e*, pulleys *g g′ h h′ i m*, and windlass *j*, applied in combination with the movable side *a* of the press-box B, in the manner and for the purpose substantially as herein set forth.

Third, the pulleys *q q′ r r′ s s′* and *t t′* applied in combination with the chains *o o′*, levers D D′, and follower C, in the manner and for the purpose substantially as shown and described.

Fourth, the double drums *u u′*, in combination with the chains *o o′*, levers D D′, and follower C, applied and operating substantially as and for the purpose set forth.

No. 46,206.—JOHN M. BATCHELDER, Cambridge, Mass.—*Vessel for holding Petroleum.*—February 7, 1855.—This invention consists in applying to the inside of vessels for holding petroleum a paint consisting of a solution of gelatine and pulverized bone-dust boiled together.

Claim.—A barrel or other vessel having a lining or interior coat, formed substantially as herein described and for the purpose specified.

No. 46,207.—FORDYCE BEALS, New Haven, Conn.—*Carriage Retractor for Breech-loading Fire-arms.*—February 7, 1865.—The retractor is adapted to arms in which the barrel is moved forward from the breech, and consists of a spring dog, or hook pivoted to the stationary stock, so that on sliding the barrel forward the said hook not only retains the cartridge case against the stationary breech in connecting with a notch in the hammer, but by means of the spring causes the cartridge case to be thrown from the arm as soon as it is entirely withdrawn from the barrel.

Claim.—First, the hammer F, provided with the notch *l m*, in combination with the ejector G, when constructed and operating as herein set forth.

Second, the spring H, when constructed and arranged to operate in combination with the ejector G, as and for the purpose set forth.

No. 46,208.—E. B. Bingham, Newark, N. J.—*Process for Manufacturing Twine from Paper.*—February 7, 1865.—The claim defines the nature of this improvement. Shellac varnish, or shellac dissolved in alcohol, is used as a suitable sizing.

Claim.—In the manufacture of twine from paper, adding a water-proof sizing to the paper pulp, or applying the same to the paper while the latter is in a moist or green state, on the frame or web, previous to its passage through the final heated pressure cylinders, and previous to its being cut into strips and receiving its twist, as herein set forth.

No. 46,209.—Charles L. Bishop.—Meriden, Conn.—*Moulders' Bench.*—February 7, 1865.—This invention consists of a bracket composed of an upright, a brace, and two horizontal arms, forming the platform or table, all of cast iron, and so constructed as to be readily taken apart and adjusted to suit the height of the workman using it.

Claim.—A moulders' bench, composed of a bracket A, ribs *a*, and cleats *d*, horizontal arms B, and brace C, all constructed and fitted together in the manner substantially as herein set forth.

No. 46,210.—Erastus Blakeslee, New Haven, Conn.—*Mess Kit.*—February 7, 1865.—This invention consists in fastening a frying pan to the bottom of a camp coffee-pot by passing the handle of the pan up through a hole made in the handle of the coffee-pot, and then catching it by passing the end of the bail through a hole in its upper end, for convenience of transportation.

Claim.—Attaching the pan to the kettle in the manner and for the purpose substantially as herein set forth and described.

No. 46,211.—John M. Brown, Portland, Maine.—*Tobacco Stopper.*—February 7, 1865.—A cover for the pipe bowl is provided with a hole in the centre and with spring arms fitted to shoulders to prevent the cover from slipping into the pipe. A stopper is attached to the lower end of a rod passing through the hole in the cover. Above the cover the rod is surrounded with a spiral spring, so that when the stopper is forced down on the tobacco in the bowl the spring may withdraw it.

Claim.—First, the pipe cover, perforated at the centre, and fitted with spring arms, having shoulders, substantially as and for the purposes described.

Second, the stopper or plunger, in combination with the rod and spiral spring, substantially as and for the purposes enumerated.

Third, the combination of the detachable cover, as described, with the spring stopper or plunger, as described.

No. 46,212.—Morgan W. Brown, New York, N. Y.—*Handle for Lamp Chimney.*—February 7, 1865.—This invention consists in the construction of separate handles, as an article of manufacture, to be attached to lamp chimneys or not, at pleasure.

Claim.—A metallic handle, formed as set forth, to clasp upon and be attached to an ordinary glass chimney, in the manner and for the purpose specified.

No. 46,213.—Benajah J. Burnett, Mount Vernon, N. Y.—*Crane.*—February 7, 1865.—This invention relates to cranes in which the whole weight of the jib, with the body to be lifted, is received on the top of a supporting tower, around which the jib is capable of revolving. It consists in constructing said tower of cast iron; also, in a mode of supporting on the top of the tower the revolving cap or head from which the whole weight of the jib and its load is suspended; also, in a construction of what is termed the circular traveller, which revolves around the lower part of the tower and on which the weight of the jib is suspended from the revolving cap or head, and by which the horizontal thrust of the lower part of the jib is transmitted to the lower part of the tower.

Claim.—First, the cast-iron tower or column, of one or more pieces in height, with bottom flanges or base *a*, vertical cylindrical surface *d*, and shoulder *f*, all substantially as and for the purpose herein specified.

Second, the construction of the top of said tower, substantially as herein described, with a seat in its interior for the reception of the lower ring *i* of the box which contains the anti-friction balls upon which the cap or revolving head of the crane is supported.

Third, the cast-metal cap or revolving head C, provided with ribs or inverted brackets *k k*, for the reception of the sheave and tension bar pins *l m*, and central downwardly-projecting journal *p*, entering the box which receives the anti-friction balls upon which the said cap or head is supported, and receiving upon it the upper ring *i* of the said box, all substantially as herein specified.

Fourth, the annular box for the reception of the anti-friction balls which support the cap or revolving head C, constructed of two rings *i i*, the one forming the bottom and outer

sides of the box, fitted into a seat in the top of the tower or column, and the other forming the top and inner sides of the box, fitted to the journal of the cap or revolving head, substantially as described.

Fifth, the construction of the circular traveller B, with a flange for the reception of the suspending side branch rods, and with bearings for the reception of the jib shoes and counter-weight sills, so that each thrusts against the other, and a rolling joint is provided for the said shoes to permit the adjustment of the jib, all substantially as herein set forth.

Sixth, the branch side rods for suspending the circular traveller from the revolving head or cap, constructed with their upper parts single, as shown at G, and with their lower parts in two or more branches, as shown at *q q q* in figure 1, and combined with the cap or revolving head and traveller, substantially as herein described.

No. 46,214.—CHARLES W. CAHOON, Portland, Maine.—*Bottle for Oil.*—February 7, 1865.—This invention consists of a block of wood bored nearly through, with the shoulder near the top to support a stopper. The bottle is coated on the inside with a mixture of hot linseed oil and colophoney, or it may be coated with a solution of glue in water.

Claim.—First, a wooden bottle, made by boring a solid block of wood, and fitted with a stopper, rendered impenetrable to liquids, substantially as herein described.

Second, fastening a stopper into a bottle by means of a button, the ends of which fit into niches, substantially as described.

Third, a bottle having a shoulder and a flaring neck, in combination with a straight-side, uniform stopper, as herein described.

Fourth, a bottle fitted with channels, as herein described.

No. 46,215.—H. W. CATLIN, Burlington, Vt.—*Whip-socket Fastening.*—February 7, 1865.—This invention relates to a whip-socket fastening for vehicles. It consists in the employment of two washers, in the centre of which a screw passes, first through one of the washers, then through the dash board, then through the other washer, and is finally fixed in a socket.

Claim.—The washer B in combination with the screw C, passing through the dash D into the socket A, to be arranged substantially in the manner as and for the purpose set forth.

No. 46,216.—NORMAN CHAPPELL, East Avon, N. Y.—*Bean Harvester.*—February 7, 1865.—This invention relates to a machine for harvesting beans. Colters are attached to the frame in front of the cutters, which pass between the rows and separate the tops. The cutters pass under the ground two or three inches, thereby throwing the beans backward upon skeleton clearers of a conical form which are attached by links to the cutters.

Claim.—The clearer or clearers H, in combination with the cutter or cutters G, and a suitable frame A, arranged and operating substantially as herein set forth.

Also, in combination with the clearers H, cutters G, and frame A, the colters I, arranged and operating substantially as herein specified.

No. 46,217.—JOHN R. CROSS, Chicago, Ill.—*Packing for Oil Wells.*—February 7, 1865.—The object of this invention is to pack the space between the sides of the well and the pipe through which the oil is ejected, and thereby prevent water from passing to the oil below and admit of adjustment from outside of the well, so as to compress or relax the packing at pleasure, and enable the packing to be removed and adjusted at various points of the well without involving the loss or destruction of it. Its novelty consists in the arrangement of a fibrous or elastic substance in combination with rings, whereby, through the agency of screw rods, the rings are made to approach each other and the packing thereby be compressed so as to fill the space between the tube and sides of the well.

Claim.—The arrangement for artesian oil wells of a fibrous material D, consisting of hemp or other elastic substance, in combination with the rings A A′, or other suitable frame therefor, so arranged that when said rings approach each other the packing material is compressed laterally, so as to fill the space between the tube and sides of the well, and relaxed when the rings are made to recede, the same being operated from the top of the well by the screw rods *d d*, substantially in the manner and for the purpose set forth.

Also, in combination with said packing device, the valve *f*, and tube *g*, operating in the manner and for the purpose herein set forth.

No. 46,218.—T. D. DAY, New York, N. Y.—*Ladies' Dress Protector.*—February 7, 1865.—This invention consists of a broad lining or facing of any suitable material, to be attached to the inside of the lower extremity of the skirt, which is first distended by spring wires or other suitable springs passing in and out in the direction of its width, the material being clamped at the end of the springs. Thus prepared, the facing is tacked in place.

Claim.—An interior lining or facing for the lower edge of the skirt of ladies' dresses or other garments, formed with springs introduced in the manner and for the purposes specified.

No. 46,219.—JOHN N. DENNISSON, Newark, N. J.—*Fire Engine.*—February 7, 1865.—This invention consists in placing a valve in the partition between the pump cylinder, in such

a manner that when the valve is opened the two ends of the pump cylinder next the partition come in operation, the water passing from one to the other through the aperture closed by the valve, instead of being forced out by the cylinder into the delivery pipe. By this arrangement the effective area of the pump attached to steam engines is regulated according to the length of hose to be used, or the number of streams of water to be thrown.

Claim.—The increasing or diminishing the effective area of the pump or pumps by means of a valve placed in the partition between them, or other means, substantially the same as when attached to the steam fire-engines, so that the quantity of water discharged at a stroke can be increased or diminished at pleasure without altering speed or stroke, for the purposes herein set forth.

No. 46,220.—ARTHUR DE WITZLEBEN, Washington, D. C.—*Ball Screw for Fire-arms.*—February 7, 1865.—This invention relates to a bullet extractor, having two spring jaws with auger-like points, and the novelty consists in forming on the inside of the piercing points a projecting edge, or screw-like thread, for more effectually preventing the bullet from slipping from the grasp of the spring jaws in attempting to draw the same from the barrel of the fire-arm.

Claim.—The tines or jaws *b b*, with their threads or shoulders *a a*, forming in combination the concave screw for the uses and purposes as above described.

No. 46,221.—M. P. DORSCH, New York, N. Y.—*Paper-covered Wooden Boxes.*—February 7, 1865.—This invention consists of a round or oval box made of wood veneering, the side being lapped and glued, the bottom, when inserted, being held by a narrow strip of glued paper so laid along the angle on the outside as to be attached to both parts. The box is then covered with paper. The top is made in like manner, except that it is large enough to fit outside the upper part of the box.

Claim.—A box for collars and similar articles, made of a thin veneer of wood, with the top and bottom pieces secured to the sides by a strip of paper and other similar material glued around the said edges, and the box covered with paper, as specified, the whole forming a new article of manufacture.

No. 46,222.—JAMES B. EADS, St. Louis, Mo.—*Operating Guns in Turrets.*—February 7, 1865.—Guns with their carriages are mounted on a revolving platform, and are operated by a system of gearing, acting through the shaft on which the platform revolves, or acting concentrically therewith, whereby the guns are trained and operated, whether the platform revolves with the turret in which it is placed or independently of said turret.

Claim.—First, mounting a gun or guns upon a rotary platform, arranged to bring the muzzles of the guns to different ports in the turret or defence within which it rotates, when the power which operates the guns is communicated through devices acting concentrically with the axis of rotation of said platform.

Second, mounting guns on a rotating platform, which is arranged to rotate with a turret, when the power to operate the guns on said platform is conveyed to them through mechanical devices acting concentrically with the axis of said platform's rotation.

No. 46,223.—JAMES B. EADS, St. Louis, Mo.—*Operating Guns and Gun Turrets.*—February 7, 1865.—The platform on which the ordnance is mounted is arranged to be capable of rotating independently of the turret; and the power employed in training and deflecting the guns is transmitted through the pivot of the rotating platform, so that all the necessary adjustments may be made separately or together, as desired.

Claim.—First, the use of a rotating tower, in combination with a rotating gun platform, when each is arranged to rotate independently of the other.

Second, the combination in one turret of devices for training ordnance operated by means of power transmitted through the pivot or shaft of the platform on which the ordnance is mounted, with a rotating platform and a rotating tower, each arranged in such a manner that the training of the guns, the rotating of the platform and the revolving of the tower, may be performed independently of each other, substantially as described.

No. 46,224.—JOHN E. DOW, Boston, Mass.—*Bread and Meat Slicer.*—February 7, 1865.—This invention consists of a plate or gauge attached to a carving or table knife by a clamp and set screw, and so arranged that it may be adjusted to different thicknesses for slicing bread and meat.

Claim.—The application and arrangement of the slicer in the mode above described, or substantially the same.

No. 46,225.—WILLIAM H. ELLIOTT, Plattsburg, N. Y.—*Revolving Fire-arms.*—February 7, 1865.—This invention relates to the cylinder of a revolver, and consists in forming it in two sections by a dividing line passing through the series of chambers, but leaving the breech plate connected with the outer segment or annulus of the cylinder.

Claim.—First, dividing the cylinder *a* through its circle of chambers into two concentric parts, and having the recoil plate or breech permanently attached to the outer section, so that

the core or central portion may be drawn out in a forward direction, for the purpose of introducing the cartridges, substantially as herein described.

Second, charging the cylinder of a revolving pistol by first introducing the cartridges into the centre of it, and then by pushing them in a lateral direction to their places, as herein described.

No. 46,226.—CHARLES W. EMERY, Dorchester, Mass.—*Machine for Clipping Hair or Wool from Animals.*—February 7, 1865.—This invention consists in the employment of guards placed beneath a rotating cutter for the purpose of keeping the hair or wool erect while being cut.

Claim.—The upper guard *i*, for holding the hair or wool erect to facilitate the cutting, as herein set forth.

No. 46,227.—CHARLES ENGELSKIRKEN, Buffalo, N. Y.—*Lanterns.*—February 7, 1865.—This invention consists in an expanding and contracting button placed on the shaft for raising and lowering the wick tube of lanterns, and projecting through the case of the lantern, so as to be grasped and contracted within, when the lamp is to be removed.

Claim.—The expanding and contracting button F, constructed and operating for the purposes and substantially as described.

No. 46,228.—JOHN FARRELL, New York, N. Y.—*Fire-proof Safe.*—February 7, 1865.—This invention consists in making the filling for safes of Epsom salts alone, or combined with plaster of Paris or other suitable material—one part sulphate of magnesia to two parts of sulphate of lime.

Claim.—The employment of sulphate of magnesia in filling in the fire-proof chambers of safes, chests, and other like structures, when prepared and put in, substantially as and for the purpose specified.

No. 46,229.—H. E. FESSEL and F. KRAUTWADI, Chicago, Ill.—*Trip Hammer.*—February 7, 1865.—In this invention the hammer strap is drawn upward by means of two pulleys, which are brought together so as to compress the strap between them. One of these, the driving pulley, is fast upon its axle and turns in fixed bearings, while the other turns loosely upon an eccentrically journalled axis, arranged also in fixed bearings, but so as to be incapable of turning therein except as force is applied to it to effect that object. To one end of the latter shaft there is attached a horizontal arm, the outer end of which is connected to a hand lever or treadle by a connecting rod. By means of these appliances the eccentrically journalled shaft can be turned at will, so as to remove its roller from contact with the strap, and allow the hammer to fall through any length of spaced desired, within the limits of the machine.

Claim.—The combination and arrangement of the devices *e f g*, constituting both a tripping and adjusting contrivance, with the friction rollers *c c'*, crank shaft E, and hammer F C, in the manner and for the purpose described.

No. 46,230.—NATHANIEL C. FOWLER, Yarmouth, Mass.—*Combining Aluminum with Vulcanite and other Materials.*—February 7, 1865.—This invention consists in combining or mixing granulated aluminum with vulcanizable compound, and then vulcanizing in the usual manner; also in inlaying articles of vulcanite with aluminum, and also in joinings, clasps, &c., of rubber articles of aluminum; also in making tacks, nails, &c., for rubber shoes of aluminum. Heretofore only gold and platinum have been used in the manner proposed in this invention, since the sulphur in the vulcanite compound corrodes any of the other metals. This difficulty does not occur with aluminum, and it has the advantage over gold and silver in applications such as dental plates of great lightness.

Claim.—First, so combining granulated aluminum with vulcanite or rubber or analogous material, such as gutta-percha, forming a compound or composition of matter, substantially as described.

Second, the use of aluminum for the purpose of forming the joining of articles made of vulcanite, for attaching rubber or vulcanite to other material, and for inlaying and ornamenting articles of vulcanite.

Third, the use of vulcanite for the purpose of attaching articles made of aluminum to other materials, or to other articles made of aluminum.

Fourth, inlaying articles made of aluminum with vulcanite, and imitating articles made of aluminum by a clasp, rivet, or other fastening or ornamental device made of vulcanite.

No. 46,231.—THOMAS W. GOODWIN, Portsmouth, Va.—*Lubricator.*—February 7, 1865.—This invention consists of a tube descending from the flaring receptacle of oil, and receives a transverse cock plug which determines the course of the current by permitting it to flow in a straight line, or connecting the reservoir with the upper or lower portion of the pipe, at the direction of the operator; the plug having at its end a side perforation communicating with a central bore to the end for the escape of steam, when the cock is so set as to permit the influx of the oil.

Claim.—First, the arrangement, within a lubricator, of a single cock having three or more openings arranged in such a manner as to make an induction and eduction passage, when used as and for the purposes herein described.

Second, in combination with a lubricator, the mode of charging and discharging the reservoir, by means of a single cock arranged within a lubricator, when used substantially as described.

No. 46,232.—SOLOMON S. GREG, Boston, Mass.—*Ladies' Paper Collar.*—February 7, 1865.—This invention consists in the collar being fluted transversely and made gently contractile, except on about one-fifth its width along what is intended for the inner edge, where it is more rigidly crimped; it is thus made to assume and retain a circular form, having the rigid crimping at its inner periphery.

Claim —As a new article of manufacture, a paper or cloth and paper collar, to which the requisite curve or shape is given by contracting one of its edges, substantially as described.

No. 46,233.—HOLMAN J. HALE, New York, N. Y.—*Tobacco Paper.*—February 7, 1865.—This invention consists in coating thin sheets of paper on one or both surfaces with fine particles of waste tobacco, by means of some adhesive substance.

Claim.—Tobacco paper made substantially as above described.

Also, the use of tobacco paper, made substantially as described, in the manufacture of tobacco cartridges and tobacco rettes made from said material, substantially as above set forth.

No. 46,234.—THOMAS HALL, Boston, Mass.—*Voltaic Soles.*—February 7, 1865.—The nature of this invention will be evident from the claim.

Claim.—The combination of the non-conducting sole or base with a series of alternate plates of dissimilar metals lapping upon each other, so that their points of contact may be kept bright by the friction caused by the motion of the foot, and allowing the moisture or perpiration of the foot to act upon both metals at the junction of the plates.

No. 46,235.—THOMAS GEORGE HAROLD, Brooklyn, N. Y.—*Wire Fork for Toasting, &c.*—February 7, 1865.—This invention consists in the construction of a toasting iron with one or two pieces of wire so coiled at the back end as to form a spring, which, operating on the jaws of the toaster by reverse action, draws them together and holds the bread or whatever is being toasted or broiled, the handles being twisted over each other so that one of them works in a slot guide on the other; a wire ring is also coiled around them at the point of crossing, to hold the jaws in place.

Claim.—First, constructing an apparatus for toasting, broiling, &c., of two clamps, pressed towards each other by a spring or springs, in substantially the manner described and shown.

Second, retaining the said clamps in correct position to each other by guides, in the manner and for the purpose specified.

Third, the combination of the clamps *a a'*, spring *b*, and guides *c* or *c*, for the purposes set forth.

No. 46,236.—THOMAS S. HUDSON, East Cambridge, Mass.—*Hanger for Lamps.*—February 7, 1865.—This invention consists in a lamp-support hanger, composed of a series of glass tubes with end caps of metal strings, on a metal rod with an end of a metallic attachment.

Claim.—The lamp-support hanger, as composed of a series of glass tubes, the end caps or cups, the rod or its equivalent, and the end attachments, arranged relatively to one another, substantially as described.

No. 46,237.—JULIUS HORNIG, Oswego, N. Y.—*Shears for Cutting Metal.*—February 7, 1865.—This invention relates to a method of holding the free end of the lever of the shears up to, or connecting the same with, the eccentric which operates the shears, and also to the application of a washer to the hub or trunnion of the shears. The shear lever is connected to the eccentric by means of a strap guided in a groove on the eccentric, with which is combined a radial arm secured to the lever by means of a pin on which it is free to vibrate. The upper end of the shear lever is formed with a curved face and combined with an eccentric moving against its face, where it is held by means of a radial vibrating arm.

Claim.—First, the metal shears connecting the shear lever to the eccentric, by means of a strap guided in a groove on the eccentric, in combination with a radial arm secured to the lever by means of a pin L, on which it is free to vibrate, substantially as above described.

Second, also the curved face *d*, of the upper end of the shear lever, in combination with an eccentric against whose face it moves, and against which it is held by means of a radial vibrating arm K, substantially as described.

Third, also forming shoulders *s*, on the faces of the washers O, and shoulders *t*, on the faces of the bosses or projections *q*, in order to prevent the rotation of the washers during the vibrations of the lever, substantially as described.

No. 46,238.—WILLIAM S. HUDSON, Paterson, N. J.—*Device for Operating Safety Valves.*—February 7, 1865.—This invention consists of a spring, composed of steel, and constructed in the form of one-half of an elliptical spring, which is confined at its centre by a yoke, its

ends resting upon an eccentric roller or shaft, and a cross-bar rests upon two levers running parallel with the spring. The opposite end of the spring rests upon the eccentric roller in such a way that upon its being turned that end of the spring is raised and an additional amount of pressure is thrown upon the cross-bar at the opposite end, and through it upon the levers, which in turn communicate it to the bell cranks, which are operated by the rods extending up to the safety-valve levers. The novelty consists in the combination of the bell-crank levers with the eccentric shaft and lever with which it is manipulated in such a way that any pressure upon the safety valve which is sufficient to start it from its seat will continue its motion through its entire range, and thus prevent any increase of pressure in the boiler by providing an increased area for the escape of the steam.

Claim.—The bell-crank levers, in combination with the means L M, or their equivalents, for rapidly changing the initial tension of the spring I within wide limits, substantially as and for the purpose herein set forth.

No. 46,239.—HENRY HUNGERFORD, Brooklyn, N. Y.—*Key Fastener.*—February 7, 1865.—The key is provided with a hole in that part which enters the lock. The bolt of the lock is placed generally directly over the keyhole and key, and when the key is turned the end of the bolt, reduced for the purpose, enters the hole in the key and holds it so that it cannot be turned in or pushed out of the lock, neither can a tool be inserted to pick the lock.

Claim.—The combination and arrangement of the bolt C, constructed substantially as described, and its guide or case B, with the perforated key, the whole combined and operating substantially as and for the purposes set forth.

No. 46,240.—ANTHONE ISKE, Lancaster, Penn.—*Extension Table.*—February 7, 1865.—This invention consists in placing a central support beneath the table, when closed or extended, the whole forming an ornamental centre or extension table.

Claim.—The central column or support A, with its cross-pieces B C and slots *d*, in combination with the cross-slats *s* and their sliding pivots 2 3 4 and 5 in said slots *d d d d*, arranged and operating substantially in the manner and for the purpose specified.

No. 46,241.—HENRY JACKSON, Brooklyn, N. Y.—*Lock.*—February 7, 1865.—In this lock the stub, designed to enter the gates of the several tumblers after the latter shall have been properly set by the action of the key, is formed of two or more thin plates of unequal length, having a breadth sufficient to extend across the edge of the series of tumblers, and all hinged to one and the same pin. Each of the vibratory tumblers has its free end notched in the usual manner, and when force is improperly applied to the stub or to the bolt, for the purpose of compelling the stub to enter the gates of the tumblers, the sharp edges of the plates, constituting the stub, will catch into different notches in the ends of the tumblers, and, retaining their hold and moving as the tumblers move, will effectually prevent the proper arrangement of the gates and thus, of course, prevent the bolt from being retracted.

Claim.—The stub F, constructed as described of a plurality of movable plates *c c* of unequal length or projection, employed in combination with the tumblers E, in the manner and for the purpose specified.

No. 46,242.—C. JILLSON, Worcester, Mass.—*Machine for Pointing Wires in the Coil.*—February 7, 1865.—This device consists of a revolving mandril, supported on a suitable frame, and bearing a cross-head, to the face of which two cutters are attached, with their edges towards the centre and opposite each other, and between which the wire is passed for the purpose of reducing it to a uniform size. In a slot or longitudinal mortise within this cross-head, and behind the first set of cutters and attached to a bar sliding in said slot, are two more cutters, which reduce the point of the wire to its proper size, which latter, in passing inwards, presses against a spring rod sliding longitudinally in the mandril, and which carries, on an arm projecting through a slot in said mandril, a pattern, which, sliding at right angles with the cutter bar and across the cutter head, presses its inclined surface against a stud in said cutter bar, and forces the latter, with its cutters, outward from the centre, and gives to the wire, by said movement, a shape corresponding to the pattern.

Claim.—Combining the cutter head and pattern with a revolving shaft having a spring or yielding roll within it, as and for the purpose herein described and represented.

Also, in combination with a revolving cutter head and pattern, the extending of the cutter stock or cutters that are operated by said pattern clear through the cutter head, so that said cutters will not be thrown out or in anywise moved by the centrifugal force of the revolving head, substantially as described.

No. 46,243.—BENJAMIN F. JOSLYN, Stonington, Conn.—*Revolving Fire-arm.*—February 7, 1865.—This invention relates to a device for locking the cylinder immediately after each partial revolution thereof, and consists in the employment of a pin or bolt passing vertically downward through the top and rear portion of the frame into suitable recesses in a central projection at the rear of the cylinder, which is depressed by a spring on the top of the frame, and is raised by a slot in the nose of the hammer engaging with a small transverse spring pin passing through the said bolt, whereby the cylinder remains normally locked, except during the instant required for revolving the cylinder.

Claim.—The rod I and its transverse rod *m*, in combination with the recessed and inclined end of the hammer; the whole being arranged and operating for the locking and unlocking of the cylinder, substantially as and for the purpose herein set forth.

No. 46,244.—MORRIS L. KEEN and HUGH BURGESS, Rogers's Ford, Penn.—*Apparatus for Evaporating and Calcining Alkaline Solutions.*—February 7, 1865.—This invention consists in an apparatus for recovering alkali from the waste liquor of paper pulp. The heat after passing over the evaporating hearth is carried up into the chamber and over the surface of the alkaline solution in the pans. The alkaline solution is supplied to the upper pan from a reservoir, and flows from thence into the pan next below it, and so on until it reaches the hearth when it is ready for calcination. The calcination is effected in the furnace, which is constructed like the hearth of the evaporator.

Claim.—A furnace constructed for the purpose of evaporating the alkaline solutions used in the pulping and disintegrating of vegetable substances, in which the heat is utilized by means of an arrangement of pans or their equivalents, substantially as and for the purpose described.

Also, in combination with the main evaporator the finishing or calcining furnace or furnaces, substantially as described.

No. 46,245.—CHARLES KETCHAM, Penn Yan, N. Y.—*Corn Sheller.*—February 7, 1865; antedated January 29, 1865.—This invention consists of a series of guides and agitators for facilitating the passage of the ears into the body of the machine. Through the centre of the hopper passes a perpendicular shaft carrying a hollow metallic cylinder. This shaft works in a journal in the bed piece of the machine, and has a pulley outside for connecting with any power to be applied. This cylinder is surrounded by a series of concave plates, pivoted at top and bottom so as to swing outside by pressure of very large ears, and held in place by springs. The insides of these concave sections or plates are provided with rows of teeth. The interior cylinder, the surrounding plates, and bottom of the exterior casing are perforated with holes to facilitate the passage of the corn as fast as shelled.

Claim.—First, the cylinder H, when made as specified and used for the purpose set forth.

Second, the concave when composed of the sections F, substantially as specified.

Third, the guides M, and agitators I, when constructed, arranged, and used as specified.

Fourth, encasing the concave, substantially as specified, and for the purposes set forth.

Fifth, the plates B and C, and hopper L, when constructed as specified, and used in combinations with the other parts of the machine as set set forth.

No. 46,246.—HENRY KNIGHT, Brooklyn, N. Y.—*Tapping Branch for Water and other Pipes.*—February 7, 1865.—This device consists of a cup or thimble, screw-threaded on the interior, and having a flange at bottom. This is inserted from the inside through a suitable hole in the sheet-iron shell of the pipe, and properly secured at the place desired; after which the cement lining is made in said pipe, surrounding the flange on the bottom of the cup. A hole can then be drilled through the bottom and a branch pipe attached in the usual way.

Claim.—As a new and improved article of manufacture the flanged cup A, having one end closed, and otherwise adapted to form connections for pipes.

No. 46, 247.—ANGELINA J. KNOX, Boston, Mass.—*Method of Preserving and Restoring Natural Flowers.*—February 7, 1865.—This invention consists in imbedding the flowers in sand, the large flowers being previously taken to pieces, and subjecting them to a temperature of 80° Fah., until all the water is expelled. If old and dried flowers are used they are soaked for a short time in warm water or alcohol, and then smoothed out with the fingers. After the flowers have been thus prepared they are coated with wax, such as is used in the manufacture of ordinary wax flowers, the large flowers which have been taken to pieces being put together in the same manner as in making artificial flowers.

Claim.—The process for restoring, treating, and preserving natu al flowers, substantially as hereinbefore described.

No. 46,248.—JOHN P. LAIRD, Altoona, Penn.—*Car Bumper Attachment.*—February 7, 1865. —This invention relates to the guides for the bumper and bumper plates of railway cars, and consists in so embedding the said guides in packing blocks of wood that they can be formed much lighter and less expensive than ordinary guides, and at the same time are more capable of resisting the violent strains and shocks to which they are subjected; also, in a stoppage block for limiting and regulating the limit of the bumper plate to suit differerent styles of springs.

Claim.—First, the guide plates F, imbedded in the wooden blocks E E, and secured to the beams of the car, substantially as and for the purpose herein set forth.

Second, the stirrup N, confined between the beams E E, and secured to the bumper beams substantially as specified.

Third, the adjustable stopping blocks M, adapted to the plates F and G, and to a bolt *b*, which passes through the same, all substantially as set forth for the purpose specified.

No. 46,249.—James A. Lawson, Troy, N. Y.—*Ventilating and Check Draught Damper.*—February 7, 1865.—This invention consists of a vertical revolving damper around a stove or furnace pipe arranged before a horizontal damper placed in the exit pipe, and of less diameter than the exit pipe, and so constructed that when the vertical damper is open the horizontal damper is at right angles with the pipe.

Claim.—The employment of a horizontal damper in any stove or furnace exit-pipe, and of less diameter than such pipe, and above a vertical cylinder damper around such pipe, so as to more effectually check the draught by bringing the hot air within the said pipe in contact or conjunction with cold air admitted from room surrounding such pipe through said vertical cylinder damper, in the manner substantially as herein described and set forth.

Also, the combination of the vertical cylinder damper B^2, with the horizontal damper C, arranged immediately over the said vertical cylinder damper B^2, in the manner substantially as and for the purposes herein described and set forth.

No. 46,250.—James A. Lawson, Troy, N. Y.—*Heaters for Buildings.*—February 7, 1865; antedated November 15, 1864.—This invention consists in the arrangement of a return flue under the ash-pit of a heater of ordinary construction, in such manner that by a simple division plate in the flue or chamber the heat obtained from this source is economized and carried up into the flues leading into the apartments of the building.

Claim.—The employment of the return flue space or chamber G, in combination with the vertical pipes D and E, and with the fire chamber A, in the manner and for the purposes substantially as herein described and set forth.

No. 46,251.—Robert Lee, Cincinnati, Ohio.—*Shutter Hinge.*—February 7, 1865.—This invention consists in furnishing that part of the hinge attached to the window frame and surrounding the base of the pintle with a small spur flange or wheel, into the teeth of which can be made to catch a spring latch or pawl, fastened to the other part of the hinge, attached to and capable of being operated from the inside, and by means of which the shutter can be secured in any position desired.

Claim.—As a new article of manufacture the shutter hinge herein described, consisting of the parts A B, flange C, the radial notches *c c c*, gravitating catch D, fulcrum pin *d*, and hand lever E, all constructed, arranged, and operating as specified.

No. 46,252.—William A. Lighthall, New York, N. Y.—*Feed-water Heaters for Steam Boilers.*—February 7, 1865.—This invention consists in arranging the heater in conjunction with the condenser, and placing them in such a position that the steam from the engine on its way to the condenser shall pass through the heater in order that a portion of its heat shall be abstracted therefrom and imparted to the feed-water. The steam thus reduced in temperature passes directly out of the heater and into the condenser, when the process of condensation is completed, and the water of condensation may be used for any purpose that is desirable.

Claim.—The heater I, arranged as described and placed between the exhaust of a steam engine and the condenser A, as and for the purpose set forth.

No. 46,253.—William A. Lighthall, New York, N. Y.—*Condenser Case.*—February 7, 1865.—This invention consists in forming channels in the sides of the case for the reception of the tube sheets for the purpose of making available the room otherwise occupied by the flanches required for bolting such sheets to the case of the instrument. These channels are equal in width to the thickness of the tube sheets which are fitted to them, and are made tight with them, and when used the case can be entirely filled with tubes, leaving no more space between the tubes and case than is required for the circulation of the steam.

Claim.—The manner of constructing the sides A A′, of the case, with the apertures *a*, combined with the manner of securing the tube sheets B B′, and division plates D D, (or either of them,) in place, as herein set forth.

No. 46,254.—William A. Lighthall, New York city.—*Condenser.*—February 7, 1865.—This invention consists in a partition placed in the chamber in which the cooling water is received, for the purpose of compelling such water to pass the tubes of the lower or cooling section of the condenser, and returning through the upper or condensing series of tubes; the object being to more thoroughly cool the condensed water than could be done if the cooling water entered both the condensing and cooling tubes at the same time. It further consists in the arrangement of the induction and eduction nozzle for the steam and water, and the division plates at one and the same end of the condenser, whereby the steam and water are each made to traverse the entire length of the instrument in opposite directions before being discharged therefrom.

Claim.—First, the combination of the division plate C′ with the section of cooling tubes A, as and for the purpose set forth.

Second, the combination of the division plate C′ with the tube sheet and cover to the end of the case (as shown,) for the purpose of dividing the space between the said tube sheet and cover into two sections as set forth.

Third, the arrangement of the cooling water-receiving nozzle B, the cooling water-delivery nozzle D, the steam nozzle E, the condensed water nozzle G, and the division plate C′, placed at the same end of the apparatus as shown, and for the purposes set forth.

No. 46,255.—C. L. LOCHMAN, Carlisle, Pa.—*Funnel.*—February 7, 1865.—This invention consists of a double funnel, the liquid being caused to flow through the inner one and the air to escape between the two, a guide-rod descending to sustain a valve at the end of the funnel within the vessel, the funnel being closed by said rod in the act of lifting from the vessel; an escape tube permits the flow of the liquid to any desired point when it rises in the air passage.

Claim.—The valve or stopper *c*, with its handle and connecting rod *h* and *l*, or their equivalents, the elastic cone or washer, *g*, or its equivalent. the cock, *d*, and springs or catches, *m m*, constructed and connected substantially as and for the purposes specified.

No. 46,256.—JOSIAH LYMAN, Lenox, Mass.—*Draughting Scale.*—February 7, 1865.—This invention consists in having the edges of the rule or scale bevelled, and finished with minute divisions, or cuts, to serve as guides for the dotting pin, from the upper edge quite down to the paper.

Claim.—First, such an arrangement, application and graduation of the bevelled edge of the scale herein set forth as render it a universal reliable guide to the needle point in making a dot on the paper at the end of any required or given distance.

Second, the arrangement and application of the slide spring, as set forth, to the scale herein described, by which it is brought in contact with and becomes a part of the protracting trigonometer, or of a T square.

No. 46,257.—WALTER K. MARVIN, New York city.—*Hoisting Apparatus.*—February 7, 1865.—This invention has for its object the economical application to hoisting machines otherwise ordinarily constructed, of available power derived from some prime mover, thereby to save labor and expense.

Claim.—The method herein described of applying power to hoisting apparatus by the employment of friction pulleys operating by compression upon a rope or cable, or the equivalent therefor, substantially in the manner herein set forth.

No. 46,258.—P. J. MARQUA, Cincinnati, Ohio.—*Hobby-horse.*—February 7, 1865.—This invention consists of a rearing hobby-horse, made so that several children may ride at a time, each assisting to manage the horse by means of a balancing beam, which enables them to keep an equilibrium.

Claim.—First, the combination rearing hobby-horse A, vibrating beam B, seat I, and spring K, arranged and operating substantially as set forth.

Second, the slots G G′, and the devices for the relative adjustment of the seat and horse, as explained.

Third, the arrangement of the rearing hobby-horse A, seat I, reins O O′, and pulley T, adapted to operate as set forth.

Fourth, the India-rubber thong K, and clamp L L′ M, arranged as set forth.

No. 46,259.—JOHN A. MILLER, Paducah, Ky.—*Breech-loading Ordnance.*—February 7, 1865.—A rotating breech-piece, or charge chamber, passes through a corresponding opening in the breech of the cannon. It contains two or more chambers—rotates laterally, having two legs which join below where it is pivoted. It is longer than the diameter of the gun, so that while one chamber is in line with the bore the other can be loaded. This rotating charge chamber is pivoted to a projection extending below the rear end of the gun.

Claim.—The shape and construction of the balance C, operating in a corresponding curved aperture E, in the breech of the gun, in combination with the support B, as herein described, for the purpose of firing cannon rapidly.

No. 46,260.—JONATHAN E. MORSE, Boston, Mass.—*Evaporator for Saccharine and other Liquids.*—February 7, 1865.—This invention consists in a series of three or more pans with hood-like covers. The pans are so arranged that the liquid may flow from one to the other by pipes. By means of a series of flues and dampers, the products of combustion from the furnaces are made to pass under each or all of the pans at pleasure. In the top there is an opening in the steam passage with perforations on the upper side. When steam is permitted to issue from these orifices the vapor is drawn off from the surface of the pans, and evaporation thereby increased.

Claim.—A train of evaporating pans with furnaces and flues arranged to operate in connection therewith, substantially as described.

Also, the employment with an open evaporator of a cover and steam jets, when arranged to operate substantially as specified.

No. 46,261.—SAMUEL PENNOCK, Kennett Square, Penn.—*Machine for Bending Sheet Metal.*—February 7, 1865.—This invention consists in the construction and arrangement of the horizontally sliding bed plate, down upon the face of which the sheet of metal is bent by means of a hinged block or jaw in the usual manner. Thus each end of the bed plate is continued out beyond the frame and rounded so as to form journals, and the latter are connected by two stirrups to two eccentrics, arranged respectively in opposite ends of a shaft, by means of which the bed plate may be forced forward to press the sheet of metal up against

the stationary jaw. Two other eccentrics, operating from below, serve to elevate or depress the hinged edge of the bed plate, so that its upper surface may be adjusted in a horizontal plane or at different angles thereto. The sheet of metal to be bent is inserted in a vertical position between the edge of the bed plate and the stationary jaw, its lower edge resting upon adjustable gauges below, and after the bending has been effected the stirrups are slipped off the ends of the bed plate and the latter removed so as to release the bent sheet.

Claim.—First, the hinged removable and adjustable bed plate C, constructed and operating as described.

Second, in combination with the above, the mode described of adjusting the bed plate C horizontally by means of the eccentric G, arranged and operating as shown, or in an equivalent manner, for producing the same result.

Third, in a machine for bending metal constructed as described, adjusting the bed plate C vertically, by the employment of the eccentric R, arranged and operated as shown, or its equivalent, substantially in the manner specified.

No. 46,262.—James L. Pike, Lynn, Mass.—*Horseshoe Calk.*—February 7, 1865.—This invention consists in making of cast iron, chilled or otherwise, a calk with one or more dowel pins on the upper side, to enter corresponding holes in the shoe.

Claim.—As a new article of manufacture a horseshoe calk of chilled or "case-hardened" cast iron, constructed substantially as and for the object specified.

No. 46,263.—William Radbourne, Rahway, N. J.—*Mangle.*—February 7, 1865.—This invention consists in a mangle, the lower roller of which has its bearings on friction rollers, while its upper roller is pressed down by the action of a semi-elliptic spring and thumb-screw.

Claim.—The application to a mangle of the semi-elliptical spring D, acting simultaneously on both boxes of the roller C, in combination with friction rollers *e*, supporting the gudgeons of the lower roller, constructed and operating substantially as and for the purpose set forth.

No. 46,264.—A. C. G. Rathburne and A. M. Comstock, Lyme, Conn.—*Belt Coupling.*—February 7, 1865.—This invention consists in the use of a plate, provided with a slot, to admit the ends of the belt to be coupled, and with two toggle jaws, the latter being depressed, after the ends of the belt have been adjusted, clamp the same without the use of rivets or any other fastening.

Claim.—The plate A, provided with a slot *a*, and operating in combination with the toggle jaws B, substantially in the manner and for the purpose set forth.

No. 46,265.—Orrin Reeve, Greenport, N. Y.—*Washing Machine.*—February 7, 1865.—This invention consists in combining with a tub, the inner ribs of which extend from the top to the bottom thereof, a rubbing board, a scolloped rim, and radially ribbed rubbers on its under side to act in conjunction with similar ribs on the bottom of the tub.

Claim.—In combination with a tub having ribs *a* on its inner perimeter, extending from the bottom to the top thereof, and radial flutes or ribs on its bottom, a rubbing board to act in conjunction therewith, having a scolloped perimeter and radial ribs on its under side, as and for the purpose herein described and represented.

No. 46,266.—J. J. Riddle, Cincinnati, Ohio.—*Vapor Lamp.*—February 7, 1865.—This invention consists in a combination of parts which can be understood only by a careful reference to the drawings and specifications.

Claim.—First, the use of the needle *n*, working through the burner and from the outside of the lamp into the valve *d*, in combination with the oil tube O, reservoir A, and air pump P, all constructed and operating in the manner and for the purpose substantially as herein shown and described.

Second, the valve S′, applied in combination with the case *t* and air pump P, as specified.

Third, placing the valve seat *d* in the top of the burner, substantially as shown in figure 3, for the purposes set forth.

Fourth, the combination of the socket R′, and pipe *g*′′, with the oil tube O, needle *n*, valve seat *d*, air pump P, and reservoir A, constructed and operating in the manner and for the purpose herein specified.

No. 46,267.—T. J. Root, Galena, Ill.—*Trip-Hammer.*—February 7, 1865.—This device consists of a lever or hammer arm inserted in a rock shaft, from the opposite side of which projects another short arm coupled by a knuckle-joint to a vertical connecting rod, surrounded by a spiral spring, thrusting downwards. The lower end of this rod is connected to and operated by a treadle.

Claim.—The rock shaft B, with hammer rod C attached, in combination with the knuckle-jointed arm H I, provided with the spiral spring J and treadle F, all constructed and arranged to operate as and for the purpose herein set forth.

No. 46,268.—James E. Rogers, Chelsea, Mass.—*Machines for Jointing Oval Frames.*—February 7, 1865.—The object of this invention is to furnish a machine to be used on a bench for fitting the joints in an oval frame, and it consists in two tables or platforms provided with stops and adjustable rests so arranged as to give the proper adjustment to the frame, and that the angle of the joint will be the same on the parts that join together.

Claim.—As my invention, the jointing apparatus or machine, composed of the two platforms A B, the stops *b f*, and adjustable rests C D, arranged and constructed substantially in manner and so as to operate as and for the purpose specified.

No. 46,269.—Louis Saarbach, Philadelphia, Penn.—*Tobacco Pipe.*—February 7, 1865.—This invention consists in the peculiar construction and arrangement of the curved tube, and the bulb or receptacle for the nicotine.

Claim.—The curved tube A, combined with the detachable bowl *c*, stem B, and reservoir D, as and for the purpose described.

No. 46,270.—Lucretia E. Sallee, Decatur, Ill.—*Mode of Constructing Dolls' Heads and other Toys.*—February 7, 1865.—This invention consists in making dolls' heads of leather, strengthened by a composition plaster, glue, and vinegar, so as to render them lighter and less fragile than the ordinary articles of a similar nature.

Claim.—First, making dolls' heads and other toys of an outer covering of leather, or its equivalent, and an inner body of cement, which sets and hardens, so as to support the said covering in shape, substantially as above described.

Second, the cement or composition above described for making a body or backing to sustain the outer surface of the toy.

No. 46,271.—William Saxton, Venice, Mich.—*Seeding Machine*—February 7, 1865.—In this machine the seed box is pivoted in such a manner to the main frame that by raising the forward end of the box the feeding device is thrown out of gear. The seeding device consists of a valve, worked by a cam on the inside of the wheels. Drag blocks are attached to the seeding box by links, and these are depressed or elevated by means of a cord or chain, and when in contact with the ground the drag blocks cover the seed.

Claim.—First, the pivoted seed-distributing plates H, arranged within the seed box D, in combination with the projections *d*, on the wheels B B, the springs *c*, on the adjustable seed-box D, all arranged substantially as and for the purpose herein set forth.

Second, the covers, J J, attached to the seed box by links K K, in connection with the cord or chain L, substantially as and for the purpose herein described.

No. 46,272.—John F. Schuffenecker, St. Louis, Mo.—*Brick Moulds.*—February 7, 1865.—This invention relates to a mode of operating brick moulds by means of a lever and rods, links, and axles.

Claim.—Operating the bottom of the moulds by means of the lever D, rods F and G, link I, and axles E E, for the purpose above specified.

No. 46,273.—John F. Schuffenecker, St. Louis, Mo.—*Machine for Making Bricks.*—February 7, 1865; antedated February 3, 1865.—This invention consists in the employment of a series of devices designated in the claim, and requiring a reference to the specification and drawings to be properly understood.

Claim—First, the manner adopted by using the toe *j*, pan *i*, cup *k*, and tube *h*, in combination, for the purpose herein described.

Second, the scraper A, operated by the cams *i i*, fork lever *j*, and joint K, as for the purpose above described.

Third, the manner to secure the position of the scraper A, by means of the spring Z, and arm I, as shown in the specification.

Fourth, the manner adopted to regulate the friction of the machine by the cams *u u*, lever *f*, guide *g*, set screw *h*, in combination with the slot of the rod *x*, as shown and described in the foregoing specifications.

Fifth, the mode adopted to prevent the clay from settling between the hopper and the quadrant by means of the plate S, grooves R, steel bar *m*, and set screws Q Q Q Q, or their equivalents, for the purpose set forth.

No. 46,274.—Thomas Short, Fairmount, Ill.—*Cultivator and Harrow.*—February 7, 1865.—In this machine the beams carrying the cultivator belts and reversible arms, carry also harrow teeth upon the upper side; a frame removable at pleasure couples together the beams at the rear end, and admits of adjustment to any width of the rows.

Claim.—First, the frames D D, provided with shovels E. and teeth F, the clevises *a d*, and screws or bolts *a'*, in combination with the adjusting frame G H, the latter permitting the cultivator frames to be operated simultaneously or independently, and adapting said frames when used as a harrow to be brought together at their rear ends, as herein specified.

Second, the combination of the treadles I, loops J, and connecting rods or wires *i*, for adjusting the frames D D, substantially as explained.

No. 46,275.—William S. Bates, Westfield, Mass., and Catharine S. Smith, Kingston, N. Y., executors of John Smith, deceased.—*Drying and Glazing Gunpowder.*—February 7, 1865.—This invention consists in drying and glazing the gunpowder at one operation. The barrels are secured around a revolving shaft, and are so arranged that a current of hot air may be caused to circulate through them. The powder is placed in these barrels through doors near each end. Steam, or hot water may be used when enclosed in pipes, instead of hot air.

Claim.—The application of heat to the cylinders or other vessel in which powder is glazed, while the process of drying is going on, for the purpose of glazing and drying the powder at one operation, substantially as above described.

Also, the method of carrying the same into operation by means of hot air and the apparatus above described, substantially as above set forth.

No. 46,276.—Daniel E. Somes, Washington, D. C.—*Buildings or Rooms for the Preservation of Food and for other purposes.*—February 7, 1865.—This invention consists in constructing the buildings with multiple walls, having intervening spaces. The cooling material, such as ice and salt, is placed in a separate apartment communicating with the chamber to be cooled, and so that the cooling material may entirely surround the said chamber or preserving room. For the purpose of ventilating the preserving chamber, tubes lead to the outside, and to cool the air entirely these tubes are made to pass through a cooling room, or through the cool spaces between the walls. When water pipes are used in the building the air tubes may be made to pass through the water pipes or through water tanks provided for the purpose. Instead of a single apartment, several, one within the other, may be constructed.

Claim.—First, the walls and chambers as described, in combination with the cooling and ventilating pipes, constructed and used as and for the purpose set forth.

Second, the series of rooms and buildings, substantially in the manner and for the purpose shown.

Third, the series of walls and chambers when used in combination with a process of rarefication and ventilation and cooling appliances.

Fourth, cooling the air in buildings in which water tanks or pipes are used, by passing the air tubes or ducts through, in, between, or around the water-pipes or tanks.

No. 46,277.—Daniel E. Somes, Washington, D. C.—*Refrigerator for Preserving Articles of Food.*—February 7, 1865.—This invention consists in constructing refrigerators with a series of walls, floors, and roofs, with chambers between; the said walls, floors, &c., being made of wood, metal, or other suitable material, or one or more of them may be made of cork or glass. The inner chambers, and one or more of the others, are filled with salt and ice, or other freezing mixture. Air is supplied to the interior of the refrigerator by means of pipes communicating with the atmosphere at their upper ends, and with the interior of the refrigerator near the floor at their lower ends. The air is discharged from pipes, the inner ends of which communicate with the interior of the refrigerator above the inner ends of the supply pipes. The refrigerator is provided with doors, which are rendered air-tight when closed by means of India-rubber tubing, or its equivalent, placed around the joint.

Claim.—First, a refrigerator with multiple wall, and so constructed that the interior shall be separated from the cooling substance, thereby excluding dampness.

Second, the use of cork for the walls in the manner and for the purpose shown.

Third, the use of glass for the walls as and for the purpose set forth.

Fourth, the pipe larger at the bottom than top, substantially as described.

Fifth, the air-tight compartments substantially as and for the purpose shown.

Sixth, the vulcanized rubber tubing, or its equivalent, when used in the manner set forth.

Seventh, the vulcanized rubber tubing when applied to any door or drawer for a similar purpose.

No. 46,278.—J. M. Stone, North Andover, Mass.—*Eccentric adjustment.*—February 7, 1865.—Many instances occur where it is desirable to secure two or more eccentrics on the same shaft, and to have them capable of adjustment within the limits of the capacity given by their construction, without the employment of set screws and keys, or other devices which form projections, and are therefore liable to catch and tear objects with which they come in contact. The object of this invention is to reciprocate, to any desired amount, the rolls in such drawing frames as are shown in the patent No. 42,076, granted March 29, 1864, to Chase and Stone.

Claim.—For the purpose of adjusting the amount of throw of any of two or more eccentrics on the same shaft, the construction and arrangement operating substantially as described.

No. 46,279.—Samuel S. Stone, Troy, N. Y.—*Paper Collar Button-hole Punches.*—February 7, 1865.—This invention is explained by the claim.

Claim.—First, two oblong male end button-hole punchers L L, arranged lengthwise, or nearly so, to each other upon and adjustable longitudinally with two separate simultaneously reciprocating slides H H, in combination with two corresponding oblong female punch-

receiving dies N N, having like arrangement and longitudinal adjustment on a stationary bed, substantially as herein described.

Also, two oblong end button-hole punchers, adjustable axially on and longitudinally with two separate simultaneously reciprocating slides, in combination with two corresponding punch-receiving dies, having like axial and longitudinal adjustment on a stationary bed, substantially as herein described.

Also, two oblong end button-hole punchers L L, arranged lengthwise, or nearly so, to each other, and a central one M, arranged crosswise thereto, on separate simultaneously reciprocating slides H H and I, and with the central punch and slide adjustable transversely to the end one, in combination with two corresponding punch-receiving end dies N N and a transversely adjustable central one *o* on a stationary bed, substantially as herein described.

Also, two oblong end button-hole punchers arranged lengthwise, or nearly so, to each other, and a central one placed crosswise thereto, on separate reciprocating slides, and with the end punchers and their slides adjustable longitudinally, in combination with corresponding central and longitudinally adjustable end punch-receiving dies on a stationary bed, substantially as herein described.

Also, two oblong end button-hole punchers arranged lengthwise, or nearly so, to each other, and a central one placed crosswise thereto, on separate simultaneously reciprocating slides, with the end punches and their sides adjustable longitudinally and the central ones transversely, in combination with corresponding longitudinally adjustable punch-receiving end dies, and a transversely adjustable central one on a stationary bed, substantially as herein described.

Also, a central oblong button-hole punch and two axially adjustable end ones, on separate simultaneously reciprocating slides, with the end punches and slides adjustable longitudinally and the central ones transversely, in combination with corresponding axially and longitudinally adjustable end punch-receiving dies, and a transversely adjustable central one on a stationary bed, substantially as herein described.

Also, two oblong button-hole punches and a central one, all adjustable axially on separate simultaneously reciprocating slides, with the end punches and slides adjustable longitudinally and the central ones transversely, in combination with corresponding axially and longitudinally adjustable end punch-receiving dies, and a transversely and axially adjustable central one on a stationary bed, substantially as herein described.

Also, the arrangement of adjustable guides *d*, in combination with end or end and central button-hole punchers, arranged on and adjustable laterally with separate simultaneously reciprocating slides, and working into corresponding adjustable punch-receiving dies on a fixed bed plate, substantially as and for the purpose herein set forth.

No. 46,280.—JOHN B. TERRY, Auburndale, Mass.—*Apparatus for Carburetting Oil.*—February 7, 1865.—This invention consists of two vessels connected together by means of a pipe, and provided with bell covers, which dip into annular channels filled with water. The air enters into a casing within one of the vessels, and is forced under the water contained in it by means of scoops which are attached to a vibrating shaft. The air as it escapes from the water rises to the top of the vessel into the bell cover. It is conveyed thence to the carburetting vessel by means of a tube, said tube being connected with a hollow rotary shaft, provided with hollow perforated arms at the lower end beneath the hydrocarbon liquid, so that the air as it escapes passes up through the hydrocarbon. The carburetting vessel is provided with a rotary shaft, to which is attached agitating arms, the ends of which have attached to them pieces of sponge, or similar material.

Claim.—The combination of one or more air cells and vibratory scoops or buckets, applied together and within the cistern A, substantially in the manner and so as to operate therewith as described.

Also, the combination of the "Barker's mill," or rotary air and agitating distributor K, with the vaporizing cistern B, the cistern A and its air-forcing apparatus.

Also, the combination and arrangement of the shaft F, its arms and sponges, or their equivalents, with the agitating and air distributor K, the cisterns A B, and the air-forcing apparatus of the cistern A.

Also, the combination of the friction brake apparatus, consisting of the lever W, the constructing rod Y, the arm *z*, the screw shaft *a'*, and the stud *b'*, or its equivalent, for the purpose set forth, with the air-forcing apparatus and the vaporizing cistern B, provided with the bell *c*, to operate as specified.

Also, the said friction apparatus, constructed substantially as described, as well as its arrangement with respect to the bell *c* and the vibratory sector, as specified.

No. 46,281.—JOSEPH S. TRUE, Garland, Maine.—*Machine for Planting Potatoes.*—February 7, 1865.—This invention consists of a rectangular frame, with the front end mounted on two wheels, and the rear end on a roller. Upon this frame is a hopper, underneath which are two boxes or cells into which the potatoes fall. At one end of the cells is a stationary knife, and in this cell is a head or piston, driven by suitable gears, which in its movement forces the potatoes against the knife, when they are cut, and the piece falls through an opening and is conducted to the ground.

Claim.—First, a reciprocating slide, provided with one or two boxes, and arranged in relation with bottom plates, one or more to operate in the manner substantially as and for the purpose herein set forth.

Second, a horizontal stationary cutter or knife, arranged with a reciprocating slide and boxes to operate substantially as and for the purpose specified.

Third, the placing of the cutter or knife in such a relative position with the sliding boxes that the latter will feed or convey the potatoes to the former, both above and below it, as set forth.

Fourth, the furrow share F at the bottom of the seed-conveying tube F, the covering shares G G, and roller I, when used in combination with the potato-dropping device, substantially as and for the purpose set forth.

No. 46,282.—CHARLES T. WAKELEY, Madison, Wis.—*Bill Holder.*—February 7, 1865.—This invention consists of a peculiar way of adjusting the straps and bands, so as to vary the thickness and elasticity, &c.

Claim.—The hasps or fasteners C and D, in combination with the straps and bands I and H, adjustable in the manner and for the purposes shown and described.

No. 46,283.—FREDERICK A. WEBER and WILLIAM H. GREENE, Woonsocket, R. I.—*Soda-water Apparatus.*—February 7, 1865.—This invention consists of a chest containing the sirup vessels and valve case. Into this valve case the pipes from the sirup vessel and the pipe from the soda fountain extend, it being connected to the draught tube. The valve case is constructed with a series of valves, one for each sirup pipe, the said valves being operated by rods, and it is also provided with a valve for the soda tube, which is operated by the rod.

Claim.—The valve case *d*, when arranged within the box *a* and with the system of sirup pipes *i*, fountain pipe *e*, and outlet pipe *f* connecting therewith, the valves in the sirup and fountain pipes being operated by a system of levers and valve rods, and the whole constructed and arranged substantially as shown.

No. 46,284.—FREDERICK A. WEBER and WILLIAM A. GREENE, Woonsocket, R. I.—*Draught Tube for Soda-water Apparatus.*—February 7, 1865.—This invention consists of a casing, within which is a tube *b*, the same tube being a continuation of a tube *c*. The internal diameter of the tube *b* is decreased at its lower end, forming a passage *d*. Just above this passage are two lateral orifices, which are controlled by a gate that encircles the tube *b*, the said tube being connected with a stem and handle.

Claim.—The construction of a draught tube for soda-water apparatus, with an inner tube *b*, having an outlet *d* and lateral orifices *e*, opening into the tube *a* and controlled by a gate *f*, the whole being constructed and arranged to operate substantially as set forth.

No. 46,285.—WILLIAM S. WEIR, Jr., Monmouth, Ill.—*Corn Plough.*—February 7, 1865.—This invention consists in a mode of fastening up the rear end of the plough beams when not in use. The beams are hung over hooks at the end of two pivoted rods, whose interior ends pass through a staple on a lever jointed to the rear of the draught pole. As the lever is raised the plough beams drop to the ground.

Claim.—The curved rods M attached to the back end of the bars *d d*, and bent in the form of hooks *k* at their lower ends, in connection with the lever *o* attached to the back end of the draught pole C, all being arranged and applied substantially as and for the purposes specified.

No. 46,286.—HENRY F. WHEELER, Boston, Mass.—*Magazine Breech-loading Fire-arms.*—February 7, 1865.—The barrel is surrounded by a tube in which it slides longitudinally, and when in its forward position receives the charge from an oscillating magazine in the stock. By the movement of the trigger the magazine is turned down, and the barrel flies back under the operation of a spring against the breech piece, which also oscillates during the loading and firing process. The charge is fired by the action of the barrel in being thrown back against the breech piece.

Claim.—A fire-arm having a sliding barrel, the charge of which, inserted at the breech, is fired by driving back the barrel against a percussion or breech block.

Also, the swinging breech or percussion block, constructed and arranged to operate with respect to the barrel and the magazine or cartridge tube, substantially as set forth.

Also, the magazine or cartridge tube, when arranged to connect with and be disconnected from the barrel, substantially as set forth.

Also, holding the barrel in forward position, or the arm cocked, by the employment of the forward end of the magazine tube, substantially as described.

Also, the arrangement of the breech or percussion block to swing above the path of movement of the cartridge tube, to permit the connection of the cartridge tube and barrel and the cocking of the piece.

Also, the arrangement of the cartridge tube, to allow of its movement to permit the descent into place of the breech block, and the spring movement of the barrel.

Also, the manner of withdrawing and expelling the shell of the exploded cartridge by de-

taining it upon the cartridge tube or breech block, and throwing it therefrom, substantially as set forth.

Also, producing the forward movement of the barrel and the downward movement of the cartridge tube by the direct action of the trigger lever, substantially as set forth.

Also, the arrangement of a barrel within a case or cylinder containing the spring, by which the rear or percussion movement of the barrel is produced.

Also, so combining the magazine tube and percussion block that they move together or as one piece, substantially as set forth.

No. 46,287.—GEORGE W. WHITE, New York, N. Y.—*Apparatus for Calcining Ores.*—February 7, 1865.—This invention consists of a furnace and cylinder, which latter is supported on rollers, and is lined with fire brick. It is also provided with passages containing the ore to be calcined, the said passages being designed to conduct the products of combustion from the furnace. The passages are grooved from end to end, and the ore is supplied to the same by means of a hopper, the supply being regulated by means of the feed device, and escapes through into the trough, from which it is washed by a stream of water. Near the top of the smoke stack is a coil of perforated pipe, so arranged that water may be forced through it horizontally in every direction, so as to stop the fine particles of ore as they escape and carry them down to the compartment where they may be collected.

Claim.—First, the combination in the rotating cylinder of separate combustion and calcining flues or passages, substantially as and for the purposes herein specified.

Second, the furnace located at the opposite end of the rotating cylinder to that at which the ore or other substance to be calcined enters, substantially as and for the purpose herein set forth.

Third, so combining the calcining flues or passages of the rotating cylinder with the furnace that the gases eliminated from the ore or other substance in the said passages may enter into combustion in the furnace, substantially as and for the purposes specified.

Fourth, in a rotating cylinder, with separate combustion and calcining flues or passages combined with a furnace, as described, constructing the inner surfaces of the separate calcining passages with grooves, cavities, or projections, substantially as and for the purpose herein specified.

Fifth, the coiled perforated water pipe *f* placed in the smoke-stack or vertical flue, in combination with the rotating cylinder, substantially as and for the purpose herein specified.

No. 46,288.—FREDERICK WOOD, Somerville, Mass.—*Clasps for Wearing Apparel.*—February 7, 1865.—A convex disk is riveted to the cloth. One side of the periphery thereof is notched down nearly to the bottom of such cup or concavity; the opposite side thereof has a lateral slot at its centre. A bar carrying a disk at one end and another disk near the other end, is riveted to the cloth by the first disk, the other disk fitting into the concavity of the independent disk first described, the extremity of the bar passing through the slot described, the bar between the two disks, descending into the notch.

Claim.—The improved fastener, as composed of two parts, A B, made substantially as described.

No. 46,289.—RUFUS WRIGHT, New York, N. Y.—*Pencil Sharpener.*—February 7, 1865. This device consists of a single piece of steel, of such a form that, when folded, it has a spiral cutter for the wood, a guard piece, and filing groove for pointing the lead.

Claim.—First, the spiral and tapering cutter A, constructed in the manner and employed for the purpose herein specified.

Second, the guard B, formed in one piece, with the cutter, A, and employed to protect the same, and as a protection from the same, as set forth.

Third, in combination with a guard B, constructed as herein described, the angular groove O′, for pointing the lead.

No. 46,290.—THOMAS C. BALL, assignor to LEWIS GRAHAM, HENRY HARLOW, and A. G. WASHBURN, Springfield, Vt., and said HENRY HARLOW and A. L. THOMPSON, administrator of the estate of Lewis Graham, assignors to A. G. WASHBURN.—*Mop Holder.*—February 7, 1865; antedated February 14, 1863.—Within a tubular case, mounted on a suitable handle, is a series of curved springs, arranged so as to retain the cloth of the mop within the case, and adapt themselves to varying thicknesses of cloth.

Claim.—The combination and arrangement of curved springs *a a a a*, substantially as described with the slotted head B, as set forth.

No. 46,291.—WILLIAM S. BELL, assignor to himself and W. S. BELL, JR., Boston, Mass.—*Forming Paper Collars.*—February 7, 1865.—The collar is pressed, preparatory to folding, upon a bed having a slot therein on the line to be folded. Within this slot, and descending into a vessel of water beneath, is a suitable piece of cloth by which the collar is dampened when pressed upon the slotted bed.

Claim.—The improved method of treating paper collars or collar blanks, to define and determine the line of fold, substantially as set forth.

No. 46,292.—HIRAM BERDAN, assignor to LEVI P. MORTON, trustee of HIRAM BERDAN, ABIA A. SELOVER, and WILLIAM B. BENSON, Boston, Mass.—*Cartridges for Breech-loading Rifled Fire-arms.*—February 7, 1865.—The rifling of the barrel being extended through the counter bore, the cartridge case is so formed as to fit the grooves and present the projectiles in proper position to go through the bore, the faces of one being coincident with those of the other; much friction and upsetting being thus avoided. The interior faces of the cartridge must coincide with those of the bore proper.

Claim.—An indestructible cartridge case, with an irregular exterior to correspond with the counter bore with which it is to be used, and a rifled interior, to correspond in size and form with the bore proper, in combination with one or more projectiles previously prepared to fit the rifling of the bore, the whole constructed and arranged substantially as herein described, so that the chamber will be protected from fouling, and the balls properly located in respect to the rifling of the bore, without the necessity of their entering the latter in the act of loading.

No. 46,293.—ABIJAH E. and JOSIAH B. BLOOD, assignors to themselves and WILLIAM J. and BENJAMIN F. LARABEE, Lynn, Mass.—*Coal and Ash Sifter.*—February 7, 1865.—This invention consists of a sieve set in a circular box of sheet metal, provided with a cover, said sieve being convex, or having its middle portion slightly raised, so as to break up in sifting what is called the dead centre, and to force all the coal, &c., to the outside edges, where it can be thoroughly sifted; it is placed over a receptacle for ashes, and when used a rotary motion is imparted to the apparatus by a handle on the outside.

Claim.—First, the construction of coal sifters with a vibratory bottom C C, separate from the enclosing case B B A A, carrying the screen D, or wire cloth E, with free movement independently of the stationary case.

Second, the construction of the vibratory bottom or screen E with a decided convexity upward.

Third, the combination of the case A A B B with the cross-bar Q fastened thereto, the operating rod D, and the independent convex screen E, substantially as described and for the purpose set forth.

No. 46,294.—SETH BORDEN, assignor to HENRY H. JACQUES, Newark, N. J.—*Picking Cylinders of Machines for Disintegrating Fibrous Materials.*—February 7, 1865.—This invention consists in a spiked wooden cylinder, which revolves at a very high velocity, and is spirally wound with a strand or strands of wire, for the purpose of strengthening the cylinder, and enabling it to run with safety at much higher than ordinary velocities without the danger of flying to pieces by centrifugal force.

Claim.—Binding the picker cylinders of pickers for disintegrating fibrous materials, as and for the purpose described.

No. 46,295.—ANTHONY CLARK, assignor to himself and GORHAM BLAKE, Todd's Valley, Cal.—*Flexible Pipe for Mining.*—February 7, 1865.—This invention consists of a conduit made in sections of thin sheet-iron pipes, connected together by means of strips of canvas or other material wound round the ends of the pipes, and confined thereon by means of clamps. Each section is provided with an aperture, closed by a valve opening inward to prevent the pipe from collapsing when the water is shut off.

Claim.—The improved flexile conduit, made as described, viz., of metallic pipes, cloth connections, clamping rings, valves and valve openings, constructed and arranged together substantially as represented and explained.

No. 46,296.—G. F. J. COLBURN, Newark, N. J.—*Coat and Hat Rack.*—February 7, 1867.—A T-shaped contrivance is attached to a coat and hat hook, and a U-shaped groove is formed in a rail or slip of wood. The hook can be readily attached to the rail by placing the T-shaped projection within the U-shaped groove, and the hook can be slid forward or backward at pleasure. When it is desired to make the rack thus constructed portable, a device is attached to the rail, by means of which it may be attached to or taken from a wall at pleasure.

Claim.—The combination of the hook C, bar or strip A, attachments D D, constructed, arranged, and applied in the manner and for the purpose set forth.

No. 46,297.—JOHN N. DENNISON, assignor to himself and GOULD BROTHERS, Newark, N. J.—*Rivets.*—February 7, 1865.—This invention consists in forming the head and washer with a projecting edge which, when pressed into the material riveted, takes hold of a much larger portion of the latter than is usually done by a mere shank.

Claim.—A rivet or a washer with a projecting edge, constructed in the manner and for the purpose herein above specified.

No. 46,298.—THEOPHILUS HILTON, Providence, R. I., assignor to himself and WM. D. HILTON, Cranston, R. I.—*Tree Protectors.*—February 7, 1865.—In this device the trough that surrounds the tree is made as usual, the hood being so constructed that it wholly covers the trough, and can be put around the tree and secured without the use of solder or screw bolts, and may also be removed at pleasure without injury.

Claim.—First, the hood C, for the tree protector, composed of the flanch *b*, rod *c*, and lip *a*, and united by means of a clasp *e*, the whole constructed substantially as described.

Second, the construction of a hood, as described, or its equivalent, with a trough, or its equivalent, encircling the trunk of a tree, substantially as and for the purpose specified.

No. 46,299.—JOSEPH B. JOHNSON, assignor to himself and CHARLES BUFFUM, Lynn, Mass.—*Shoes.*—February 7, 1865.—This invention consists in the employment of a false inner sole, in connection with the last and upper; in the combination of pins with the false inner sole for the purpose of holding the main sole in place; and of spurs with the false sole, for the purpose of securing the upper and outer soles in their proper position.

Claim.—The above-explained improvement in lasting a shoe, the same consisting in the employment of a false inner sole B, in connection with the last E and upper A, and drawing the upper on the said sole and last by means of thread or sewing *f*, or the equivalent thereof, extended across the inner sole, but without going into or through it.

Also, the combination of two or any other suitable number of pins and clamps *a b c*, or their equivalents, with the false inner sole B, and for the purpose of holding the main sole in place with respect to the upper, when the latter is confined to the false sole by thread or sewing *f*, or its equivalent, going across the false sole, in manner substantially as specified.

Also, the combination of the spurs *g g*, or their equivalents, with the false sole B and the upper A, when lasted as specified, such spurs being for the purpose of maintaining the said upper and the outer sole in their proper relation at or near the ball of the foot.

Also, the combination of one or more pins *a c*, or their equivalents, with the false sole B, and the sewing *f* extending across such sole and about the said pin or pins, substantially in manner as hereinbefore explained.

Also, the arrangement of the inner sole B and the sewing *i* by which the outer sole C and the upper A are united, the said sewing, under such arrangement, being carried around and outside of the periphery of, but not through, the inner sole.

No. 46,300.—SAMUEL JOHNSTON, assignor to himself and RUFUS L. HOWARD, Buffalo, N. Y.—*Combined Rakes and Reels for Harvesters.*—February 7, 1865.—This invention relates to that class of machines in which the rake and reel arms rotate about a vertical shaft, and it consists in an arrangement of two cam tracks or ways, in either of which the heel ends of the rake and reel arms may be made to travel at the pleasure of the operator by means of a spring gate, operated by a lever and cord, whereby the attendant is enabled to cause said reel arms (or any one of them) to act as rakes to sweep the grain off the platform whenever a sufficient amount is accumulated thereon to form a gavel.

Each reel arm is furnished with a hinged extension which reaches beyond the cutters, insuring a proper action of the reel upon all the grain within reach of the cutters, without interfering with the proper action of said arm as a rake, whenever it is desired to have it do so.

Claim.—First, making an automatic rake and reel combined, so that the operator can by means of a lever and cord, and the arrangement of two tracks or ways in which the elbow of the rake moves, cause either rake head to operate at pleasure as a rake and at the same time act continuously as a reel, all constructed in the manner herein described and substantially as and for the purposes set forth.

Second, in an automatic rake and reel combined for harvesting machines, the arrangement whereby the operator, without stopping the action of reeling, can drop either of the rake heads down to the platform and hold it thereon while removing the grain therefrom, constructed substantially as described and for the purposes set forth.

Third, the arrangement of the tracks or ways, when they are arranged so that in reeling the rake or rake head will drop down nearly to the cutters and move the cut grain back from them and then rise up and pass over the cut grain, substantially as described and for the purposes set forth.

Fourth, the arrangement of the driver's seat in connection with the lever, cord, and gate, substantially as described and for the purposes set forth.

Fifth, in a combined automatic rake and reel, changing the path of the roller which controls the motions of the rake when it is removing the grain from the platform, substantially as described and for the purposes herein set forth.

Sixth, the arrangement of the two tracks or ways in combination with the gates or switches, for the purposes herein set forth.

Seventh, the lever and spring attached to the forward gate, in connection with the cord for operating the same, for the purposes set forth.

Eighth, the use of the pointed washer attached to the elbow of the rake below the roller, for the purposes set forth.

Ninth, the hinged extension attached to the outer end of the rake head, applied substantially as described and for the purposes set forth.

Tenth, the combination of the elbow of the rake head with the roller and the outer and inner tracks or ways, constructed substantially as described and for the purposes set forth.

No. 46,301.—GILBERT D. JONES, assignor to himself and CHARLES PLACE, New York, N. Y.—*Coffee Roaster and Grain Dryer.*—February 7, 1865.—This invention consists of a series of horizontal plates, each rotating in a separate stationary box, the top and bottom of

which are also horizontal, and form the heating surfaces. The boxes are set a short distance apart, one above another, and communicate with each other at the central portion by an enclosed passage. The top surfaces of the said plates are smooth, wings being attached to the under sides over these plates, and to the top of the boxes are also attached wings. When the plates revolve, these wings agitate the berries or grain, and cause them to circulate over the plates and pass down through the apparatus.

Claim.—Forming a coffee roaster of a series of horizontal plates, each arranged to rotate within a closed box, the bottom of which is also horizontal, and which boxes receive and discharge near the centre, substantially in the manner set forth herein.

No. 46,302.—Hugh L. McAvoy, assignor to himself and Elias S. Hutchinson, Baltimore, Md.—*Apparatus for Carburetting Air.*—February 7, 1865.—This invention consists of a gas-holder contained within a vessel and provided with a sealing device, which consists of an inverted cup, the lower end of which is submerged in a liquid contained in the annular space between the cylinders. In the act of raising the gas-holder the lower end of the cup is lifted out of the liquid, and allows the air to flow into the gas-holder. The hydro-carbon liquid is introduced through the cock, and floats upon the water contained in the vessel, and the gas is withdrawn by means of a tube. A pan having a sleeve fitting over the tube, and provided with a plate, may be placed within the gas-holder to contain the hydro-carbon liquid.

Claim.—First, manufacturing air gas and enriching other gas by the described mode of using a holder C to contain air, receive the carbonaceous matter as it rises from the, oil in the form of vapor, and force the gas into the pipe, wherein it is conducted off, as explained.

Second, the plate E2, employed in connection with the pan E, to cause the air to pass to the pipe B, in contact with the oil and in a state of compressure, substantially as set forth.

Third, the sealing device, consisting of the cup F, cylinders G G, and a body of liquid between the latter, substantially as described.

No. 46,303.—James S. McCurdy, Bridgeport, Conn., assignor to Elias Howe, Fairfield, Conn.—*Sewing Machine.*—February 7, 1865.—In this invention it is designed to use a single thread, but by the introduction of a bobbin and its thread in the double-headed looping hook, so that the loops of the needle-thread may pass over such bobbin; the feed being in the usual direction, a chain-stitch interlaced with the second thread running through its loops will be formed. If the feed under these conditions be reversed, a common lock-stitch would be produced.

Claim.—The combination in a sewing machine of the reciprocating needle bar with a double-headed rotating hook, so formed that when rotated in combination with a reciprocating needle it will draw a loop of needle-thread through the two preceding loops, substantially as set forth.

Also, the combination of the double-headed looping hook with the shaft that imparts motion to it by means of two pins which are controlled by a cam, the whole operating substantially as set forth.

Also, the combination of the feeding instrument of the sewing machine with a shaft making one revolution to two descents by the needle-carrier through the intervention of two cams of unequal projection, the whole operating substantially as set forth.

Also, the combination of the feeding instrument with a shaft making one revolution to two descents by the needle-carrier through the intervention of two cams and two adjustable wipers, one of said cams having two protuberances of equal projection, and the other having one protuberance of greater projection than those of the other cam, the whole operating substantially as set forth.

No. 46,304.—Nathaniel Miles, Buckland, Mass., assignor to Bay State Hardware Company, Northampton, Mass.—*Table Cutlery.*—February 7, 1865.—This improvement consists in the construction of the bolster of table knives, and is so plainly illustrated in the drawings as to need no description.

Claim.—First, in table and other cutlery the bolster C D, formed separately from the tang and having the fastening part D narrower than the scale B, and let into and concealed within the latter, substantially as and for the purpose within set forth.

Second, in connection with the above the employment of the hooks, or additional parts E E, adapted to lock the separate bolster pieces to the scales B B, the whole being concealed within the latter, substantially as within set forth.

No. 46,305.—Charles Neer, assignor to the Architectural Iron Works, New York, N. Y.—*Metallic Window Sash.*—February 7, 1865.—The object of this invention is to facilitate the construction of window sashes of sheet metal, with a view to render them light, cheap of construction, more durable, and in many respects superior to ordinary wooden or metallic sashes.

Claim.—A sheet or rolled-metal window sash with sides 1 2 3, flanged strips 4, two part meeting rail B′, plug 9, stiles A A, and flanged strips or bars *c d*, all substantially as herein shown and described.

No. 46,306.—JOHN PETRIE, Jr., and JOHN KENWORTHY, Lancaster, England, administrators of the estate of SAMUEL TAYLOR, deceased, assignors to THOMAS CLEGG, North Andover, Mass.—*Machine for Washing Wool.*—February 7, 1865; patented in England July 8, 1853.—In this invention the teeth of the rotating cylinder alternately protrude and recede, in order to take up and discharge the washed wool. The vibrating frame, moving up and own, agitates and stirs the wool in the liquid in conjunction with one of the vibrating frames, whose teeth pass between those of the frame and describe a curved path, feeding the material forward.

Claim.—What is considered to be new, and therefore as the invention of the said Petrie and Taylor, is the combination of a rotating or reciprocating plunger *c*, one or more reciprocating beaters or agitators *e e**, and a rotating wheel or drum cylinder or frame *r*, armed with teeth, prongs, or tines, the whole of such parts being applied to a trough and actuated by mechanical means, substantially as described.

Also, the combination of the rotating plunger *c* and the vibrating or reciprocating arms *e*, for stirring, agitating, and moving forward the wool in the trough.

Also, further, in combination with the trough the endless apron *w*, or its equivalent, and the squeezing rollers, the lifting drum or frame *r*, above shown and described, for raising the washed wool out of the water and depositing it on the travelling endless band or other contrivance for conveying it to the squeezing rollers or some receptacle for receiving it.

Also, the combination of the squeezing rollers, the lifting wheel, one or more stirrers or agitators, and the plunger, the whole being arranged and applied to a trough substantially as and to operate as specified; and also their combination with the vibrating frame *d*, arranged in the trough as described.

No. 46,307.—AUGUST PRUSMAN, Lingen, Hanover, assignor to BERNHARD SCHAFFER and CHRISTIAN BUDENBURG, New York, N. Y.—*Spark Arrester.*—February 7, 1865.—This invention consists in the arrangement of a conical tube, cylindrical deflector, jacket and water tank, in combination with the stack and jacket, in such a manner that the products of combustion in passing up through the inner pipes are carried between the conical suspended pipe and the deflector, from whence by their own gravity they fall into the water tank and are extinguished.

Claim.—The arrangement of the inverted conical tube F, cylindrical deflector H, jacket K, and water tank I, in combination with the smoke-stack E, jacket C, and exhaust pipe A, all constructed, applied and operating as and for the purpose herein set forth.

No. 46,308.—AUGUST PRUSMAN, Lingen, Hanover, assignor to BERNARD SCHAFFER and CHRISTIAN BUDENBURG, New York, N. Y.—*Spark Arrester.*—February 7, 1865.—This invention consists in combining a single pipe, constructed in such a manner that it has a decreasing diameter from its base to about one-third of its height or length, from which point it has an increasing diameter to its top, or the remaining two-thirds of its length, with a single exhaust pipe placed directly under the axis of the smoke-pipe.

Claim.—A smoke-stack A for locomotives, expanding from the point *a* toward the top and bottom in about the proportion herein specified, and applied in combination with the exhaust pipe B, in the manner and for the purpose described.

No. 46,309.—THOMAS SHAW, assignor to himself and PHILIP S. JUSTICE, Philadelphia Penn.—*Mode of Compensation for loss of Motion.*—February 7, 1865.—This invention consists in the employment of a spring to receive surplus motion in the operation of engine counters requiring a regular and measured stroke.

Claim.—The combination of spring *k* and *m*, crank wheel *d*, and rod *f*, when connected with the recording movement *n*, in order to operate engine counters requiring a regular measured stroke, in the manner and for the purpose herein described.

No. 46,310.—GEORGE K. SNOW, Watertown, Mass., assignor to himself, MARCH BROTHERS, PIERCE & CO., Boston, Mass.—*Paper Shirt Collars.*—February 7, 1865.—This invention consists in the imitation stitching on both sides, so that the collar may be reversed or turned down.

Claim.—Improved manufacture of paper collars—that is, one having on each of its two opposite sides indentations or imprints in imitation of stitching, the whole being substantially as and for the purpose specified.

No. 46,311—E. VALENTINE and M. T. RIDOUT, assignors to themselves and WILLIAM BECK, Milwaukee, Wis.—*Machine for Making Metallic Tubes.*—February 7, 1865.—This device consists of a tapering mandrel secured in a standard, sliding vertically through a slot in the table or platform of the machine. On each side of the mandrel, but a little below its level, are hinged two clamps, the free ends of which pass beyond the standard. The space between these clamps corresponds in shape and size to the mandrel and thickness of the metal to be operated on. This is cut in the proper shape, and adjusted across on the top of the clamp; the mandrel is then depressed, bending the metal between the clamps, which then close and swage the metal around the upper surface of the mandrel, which is then allowed to rise, and the tube finished for soldering is removed.

Claim.—In combination with a movable mandrel G, or its equivalent, the hinged sliding jaws A A, pivoted upon a supporting block or table B, and operating substantially in the manner and for the purpose herein set forth.

Also, in combination with the jaws A A and movable mandrel G, or its equivalent, securing said jaws by adjustable pivots so as to adapt them to mandrels of different proportions, substantially in the manner herein set forth.

No. 46,312.—HENRY W. VEREGGE, assignor to BENJAMIN C. WHITE, MARSHALL HENRY and WILLAM CAIN, Jr., Richmond, Ind.—*Fanning Mill.*—February 7, 1865.—This invention relates to the method of hanging the sliding doors to supply air to the fan wheel, and consists of grooves on the inside of the strips which hold the doors in place, and a corresponding projection attached to the outside of the door which fits into the groove. The advantage claimed is, that the doors do not become clogged with dust.

Claim.—Hanging the slides or shutters of fanning or other similar mills to the frame, or to a piece connected to the frame by means of a tongue, strip, or block on said slides or shutters, and a horizontal groove or grooves in the face of said frame or piece, as and for the purpose set forth.

No. 46,313.—WILLIAM YOUNG, Washington, D. C., assignor to himself and CHARLES F. STANSBURY, Philadelphia, Penn.—*Ship's Galley.*—February 7, 1865.—This invention consists of a caboose stove for burning coal, having three grates in front so arranged that one or all may be used at a time, and a rear grate, over which are three large boilers. Over a central front grate is a large oven, and between the front and rear fires is another; the products of combustion from the front fires circulate up around and over the front oven, on top of which are apertures for cooking vessels; boilers may be placed over the side fires; and on the top of the stove boilers or cooking vessels can be used. Pipes from the top of the large boilers convey the steam arising in cooking to the smoke flue. Convenient arrangements are provided for the draught and for removal of ashes. The smoke flue is so divided by a central partition as to give separate passages from the front and rear fires. The galley is designed chiefly for use in vessels of the navy.

Claim.—First, the combination and arrangement of the fireplaces A′ B′ C′ and D′ and the oven E′, substantially in the manner and for the purpose specified.

Second, the arrangement and combination of the fireplaces A′ B′ C′ and D′, with the oven E′, substantially in the manner and for the purpose described.

Third, the arrangement and construction of the fireplaces A′ B′ C′, oven E′, and side recesses J K L and J′ K′ L′, substantially in the manner set forth.

Fourth, the arrangement in a ship's galley of three or more fireplaces varying in capacity, substantially as and for the purpose described.

No. 46,314.—EMANUEL BURGY, Basle, Switzerland, and LOUIS GUILLEMIN, Diebold-sheim, France.—*Machine for Dressing and Finishing Threads, &c.*—February 7, 1865.—This invention relates to an apparatus which is applicable for the purpose of dressing, finishing, and imparting lustre or gloss to all threads or filaments of silk, cotton, flax, and other fibrous substances, but more especially to yarn thread, or filaments of waste silk, or floss silk, which, by the use of this apparatus, can be rendered equal in appearance to silk, and thereby much enhanced in value.

Claim.—The combination ot a winding frame, substantially such as herein described, with the bobbins *b*, bath *e*, wipers *g*, and steamchests *h* and *i*, all constructed and operating in the manner and for the purpose substantially as set forth.

No. 46,315.—AUGUSTE DESGROFFE and ACHILLE OLLIVIER, Paris, France.—*Hydraulic Apparatus.*—February 7, 1865.—This invention consists in gradually introducing into a water-tight vessel or box, which is filled with water or other non-compressible liquid, and provided with one or more movable sides or fixtures, or made expansible, a cord or rope, in such a manner that by said rope powerful pressure is exerted on the sides of the box, which, when movable or expansible, transmit the power thus exerted on their inner surfaces to bodies placed against their outer surfaces, and a powerful pressure can be exerted with comparatively little power and with an apparatus of a simple and cheap construction.

Claim.—The employment or use of a rope *h*, or its equivalent, in combination with a box A, provided with one or more plungers or movable sides, or made of some expansible material, substantially as and for the purposes set forth.

No. 46,316.—CHARLES SCHOUBERSZKY, St. Petersburg, Russia.—*Mode of Regulating Motion of Railroad Car Trucks.*—February 7, 1865.—This invention consists in the employment of two heavy fly-wheels secured to the ends of the axle, which rests either directly or indirectly upon the driving wheels of a truck in such a manner that by the action of said fly-wheels the velocity of the truck is rendered uniform, and the momentum stored up in said fly-wheels; when the truck is going down hill will assist the locomotive in drawing a train up an incline.

Claim.—The fly-wheels A A connected to an axle B, and supported by the peripheries of the driving wheels of a truck, with or without intermediate friction wheels, substantially as and for the purpose set forth.

No. 46,317.—William Adamson, Philadelphia, Penn.—*Process for Disinfecting Noxious Vapors.*—February 14, 1865.—This invention consists in burning spent tan-bark with the fuel used in rendering lard, tallow, &c., and directing the vapors generated into the chimney along with the products of combustion, so as to disinfect the vapors from the lard or tallow.

Claim.—The use for disinfecting or deodorizing the fumes arising from burning, boiling, or fermenting animal matter of the products of combustion of spent tan-bark, old leather, or other material containing tannin, as set forth.

No. 46,318.—William Adamson, Philadelphia, Penn.—*Method of Treating Offal.*—February 14, 1865.—This invention consists of a house provided with a perforated floor and fireplace. The offal is placed upon hay or twigs, which are spread upon the perforated floor and allowed to drain, after which a fire is made in the fireplace and the products of combustion allowed to pass up into the offal until it is perfectly dry.

Claim.—Utilizing offal by draining, drying, and disinfecting it, substantially in the manner described.

No. 46,319.—Oliver Allen, San Francisco, Cal.—*Butter Mould.*—February 14, 1865.—This invention consists in forming a mould by which butter may be divided into parcels of such a shape and quantity as are required in preparing it for market, the mould being varied in size and shape to suit the demand.

Claim.—A butter mould, constructed and operating substantially in the manner herein shown and described.

No. 46,320.—Cyrus W. Baldwin, Charlestown, Mass.—*Hot-air Engine.*—February 14, 1865.—This invention relates to an arrangement for guiding flexible disk valves without hinges or central stems, and consists in pins placed at its sides and ends in a vertical position to the plane of the valve, thus allowing it to move vertically in leaving its seat. It also consists in the arrangement and combination of a secondary fire box, so placed that the products of combustion, in passing from the principal fire box to the engine, pass through it and in contact with the fuel therein, for the purpose of completing the combustion of any gaseous matter that may escape from the first or principal fire box or furnace. It further consists in placing within the principal furnace an enclosing ring, whose inner circle is perforated so as to direct the jets of air to all parts of the furnace on a level with it. This ring is hollow, and the air for the support of combustion is forced into it by the pump, and it is so arranged that it can be changed to any position between the top and bottom of the furnace.

Claim.—First, guiding a flexible disk valve, substantially as described.

Second, the employment of a secondary furnace, in combination with the primary furnace and the cylinder of a hot-air engine, when located so that the products of combustion from the primary furnace go through the secondary furnace on their passage into the cylinder, substantially as and for the purpose set forth.

Third, the arrangement in the furnace, in connection with a suitable opening or openings through the wall thereof into the air-conduit pipe, of a perforated, movable, air-passage ring, so as to be interchangeable with the movable lining rings.

No. 46,321.—E. Ball, North Manchester, Ind.—*Plough.*—February 14, 1865.—This invention consists in casting the plough beam of curved form, longitudinally and transversely, the rear part having a straight portion or surface for attaching the share and mouldboard. The land side is fastened by means of a dovetail and bolt.

Claim.—A cast iron plough beam, of curved form, longitudinally and transversely, and the lower and rear part having a straight portion or surface for the attachment of the share and mouldboard, substantially as shown and described.

Also, attaching the land side D to the beam by means of the dovetail *e* at its front end and a bolt passing through the land side, and a flange *f* at the rear of the beam, as set forth.

No. 46,322.—Willard N. Ball, La Porte, Ind.—*Snow Plough.*—February 14, 1865.—This invention relates to a plough for cleaning railroad tracks of snow, and it consists in the use of rotary shovels, in connection with scrapers, and constructed so as to be capable of being folded and expanded.

Claim.—First, the scrapers C C, in combination with the rotary shovels F, arranged and applied to a car or truck, to operate in the manner substantially as and for the purpose set forth.

Second, the rotary shovels V, arranged in relation with the shovels F, and to operate in connection therewith, substantially as and for the purpose specified.

Third, the arrangement of the shovels V substantially as herein shown and described, so that the same may be capable of being folded and expanded, as set forth.

Fourth, the slide U and links Y, arranged as shown, for folding and expanding the shovels V.

Fifth, the reversing gear M M, when applied to and used in connection with the gear of the rotary shovels F V, for the purpose set forth.

Sixth, the combination of the rotary shovels F V and scrapers C, when arranged to operate substantially as and for the purpose specified.

No. 46,323.—JOHN H. BALSLEY, Dayton, Ohio.—*Machine for Drying Tobacco.*—February 14, 1865.—A cylinder is provided with fingers or lifters upon the inside, which keep the tobacco in a state of motion as the cylinder revolves, and through which a current of heated or rarefied air passes. At the lower end of the cylinder the circumference is provided with a screen, composed of wire cloth, through which dust and fine particles pass, while the long fibre passes out at the end of the cylinder.

Claim.—First, a machine, constructed as herein described, for subjecting fine and common cut tobacco to an agitating and separating action, and at the same time to a current or currents of air, said air being heated, rarefied in the common way, all substantially as described and set forth.

Second, the rotating cylinder B J, in combination with a fan box F and endless apron E, arranged and operating substantially as described, for the purpose set forth.

No. 46,324.—ISAAC BANNISTER, Newark, N. J.—*Buckle.*—February 14, 1865.—This invention consists in the combination of two buckles, acting upon one centre bar, in contrary directions from the centre, the upper tongue resting upon the top of the frame, and the other tongue resting beneath the under frame.

Claim.—The combination of two buckles acting upon one centre bar, in contrary directions from the centre, the upper tongue resting upon the top of the frame, and the other tongue resting under the under frame, as set forth, and for the purpose named above.

No. 46,325.—JOHN BARNARD, Alton, Ill.—*Mode of Adjusting Circular Saws on their Arbors.*—February 14, 1865.—Two clamping collars are attached to an arbor by means of a feather working in a longitudinal groove in the arbor, so that the clamping collars, with the saw between them, are capable of lateral adjustment upon the arbor. This adjustment is effected by means of nuts acting upon the collars and working on a screw-thread on the arbor. The saw is slipped on a hub on one of the collars, over which the other collar fits.

Claim.—First, so applying a saw to an arbor, having a screw-thread cut on it, that the saw, together with its clamping collars, can be adjusted and set at any desired point on the arbor, substantially as described.

Second, the combination of laterally-adjustable clamping collars C C′ with jamb nuts B B′, when the latter are fitted to work on an arbor, having a screw-thread cut on it, substantially as herein described.

No. 46,326.—JOHN BAVIER, Newark, N. J.—*Buckle.*—February 14, 1865.—This invention consists in having the tongue or tongues operating outside the buckle at its extremities. The strap is held between the tongue and the edge of the top plate.

Claim.—A buckle with a tongue or tongues that operate by turning outward at the ends of the buckle, constructed substantially as shown.

No. 46,327.—EDWARD BURKE, Philadelphia, Penn.—*Washing Machine.*—February 14, 1865.—This invention consists in the combination of an ordinary washboard with a platform secured at the lower end which is to rest on the bottom of a common wash tub. Metallic arms are attached to the platform, and these partly secure the board to the tub, and the rubber to the washboard. To the rubber is secured a metallic bar in which is a slot, a clamp sliding in the slot so that the rubber is made to move directly across the washboard from top to bottom.

Claim.—The combination of the following parts: the washer *g*, in connection with the handle C C′, clamp *b b*, bar *f*, axles K and K, by metallic fixtures in slots in uprights C and C, in combination with platform A *a*′, India-rubber bands *h* and *h*, and washboard A, placed on an inclined plane, for the purpose specified.

No. 46,328.—CHARLES S. BROWN, New York, N. Y.—*Steam-heating and Fire-extinguishing Apparatus.*—February 14, 1865.—This invention consists in the combination of a steam engine, boiler, and steam-heating pipes arranged so as to carry water to extinguish fires in the building or apartment heated by the pipes, the arrangement being such that the pipes carry either steam or water, or both, to all points to which they extend.

Claim.—The combination of the steam engine, boiler, pump, and steam-heating pipes, arranged substantially as described, so as to be utilized to convey water to extinguish fires, in the manner set forth.

Also, connecting to the steam-heating pipes a pipe to supply water from a hydraulic engine or pump, or other source, and force it through said steam pipe to extinguish the fire in or around the building heated, substantially as shown and described.

Also, in combination with the steam-heating pipe or apparatus, and water supply pipe, a stop-cock or valve in the steam pipe, between the boiler and the junction of the water pipe with the steam pipe, to stop the water from running toward or into the boiler which supplies the steam to the heating pipe, substantially as shown and described.

No. 46,329.—JAMES BRADY, U. S. vols., Philadelphia, Penn.—*Sight for Ordnance.*—February 14, 1865.—This invention is applied to a pendulum sight having two graduated standard bars and one sliding extension bar between the standards, it being fixed in one and sliding on the other and made adjustable, resembling the letter T supported at its extremities.

Claim.—First, the combination of the movable sight G, with the standard bars E E, for the purpose set forth.

Second, the combination of the sight H, with the extension bar F, for the purpose set forth.

No. 46,330.—HENRY BOCK, New York, N. Y.—*Machine for Making Buttons.*—February 14, 1865.—This invention, relating to glass buttons, consists in the arrangement of a plate or pressure bar above the die block which acts upon the back of the button, while the glass is pressed into the countersunk die, the pressure bar being provided with a slot to receive the eye of the button, to be pressed into the melted glass.

Claim.—The arrangement and combination of a presser bar or plate H above the die block, provided with a slot *n*, to receive the eye of the button, and operating in the manner and for the purpose substantially as described and set forth.

No. 46,331.—S. E. BLAKE, Worcester, Mass.—*Device for Cutting and Shaving Ice.*—February 14, 1865.—This invention consists in the combination of a rotary cutter, with a follower operated by an elastic spring, all arranged in a suitable box with a discharge spout, so that ice can be cut and shaved for immediate use.

Claim.—The rotary cutter disk F, in combination with the follower K, operated by the elastic spring L, by which the ice is held up to the cutter, the whole enclosed in a box or case, substantially as described and represented.

No. 46,332.—WM. S. BELL, Jr., Boston, Mass.—*Paper Collar.*—February 14, 1865.—The band portion of the collar is cut out broad so as to be folded upon itself, and the turn-down or exterior part is folded over the turned up edge of the supplemental or strengthening part of the band.

Claim.—First, doubling the thickness of this band and cementing the folds together, substantially in the manner set forth.

Second, folding the collar upon the line *b*, by making the edge *a* the guide in such operation.

No. 46,333.—THOMAS BELL, Bellport, N. Y.—*Mode of Raising Sunken Vessels.*—February 14, 1865.—This invention consists in a method of constructing the floats employed for raising vessels, whereby they are enabled to be kept in place; also, in a system of iron pipes passing through the floats for the reception of lifting chains, whereby the slipping of the said chains is prevented, which occurs when they pass over the edges of the floats; also, in a system of rigid braces for keeping the vessel upright in the floats when partly raised, or when a portion of it is above the surface of the water; and further, in a system of plates for attaching the chains to the vessel.

Claim.—First, the camels or floats, constructed with transverse beams *d* and adapted to receive the stem or stern of a vessel, in the manner herein described.

Second, the pipes *i i*, in combination with floats A A, of the construction specified for the lifting chains to work through, substantially as and for the purpose herein specified.

Third, the braces *k k*, applied in combination with the floats A A, substantially as and for the purpose herein set forth.

Fourth, the attachment of chains to the vessel to be raised by means of plates *n n* secured to the vessel by screws, substantially as herein described.

No. 46,334.—ROWLAND J. BEARDSLEY, Brooklyn, N. Y.—*Caster for Furniture.*—February 14, 1865.—This invention consists in cutting a screw thread on the exterior of the hollow socket through which the spindle passes, to enable the said socket to be screwed into a hole in the leg of the table or other piece of furniture. The upper end of the spindle is riveted over in such manner as to form a countersunk head that will revolve in the socket.

Claim.—A wheel caster, having a screw thread on the outer surface of the socket which receives the revolving spindle, when this spindle is passed through the socket and attached thereto by means of a head formed on its upper end, as herein described.

No. 46,335.—DANIEL CLARK and THOMAS STEVENSON, Buffalo, N. Y.—*Mode of Operating the Swell of Melodeons.*—February 14, 1865.—This invention consists in connecting the swell and bellows by means of straps, so that by an extended movement of the bellows the swell may be closed by one foot and opened by the other.

Claim.—Operating the swell of melodeons and other similar musical instruments by means of the bellows pedals, substantially as described.

No. 46,336.—CHARLES CLINTON, Blooming Grove, N. Y.—*Car Coupling.*—February 14, 1865.—This invention relates to a self-acting coupling, and consists in the employment of two jaws placed one over the other within a draw-head, and hung upon journals which are connected at one end by levers, in connection with a shackle or coupling pin, provided at each end with a head; by which means a coupling is obtained which will not only connect itself, but one which may be readily disconnected without the necessity of the operator passing between the cars.

Claim.—The two jaws D D arranged within the draw-head A, substantially as shown, and operated by the gravitating levers E F pivoted respectively to the upper journal *e* and at *f*, and by a link to the other journal *e*, the said levers being shackled together by the link G, the whole arranged substantially as described and represented.

Also, the socket and spring B, in combination with the shackle or pin H and jaws D D, all arranged substantially as and for the purpose specified.

No. 46,337.—P. COLEMAN, Philadelphia, Penn.—*Machine for Making Nuts.*—February 14, 1865.—This invention consists of a gauge bar or stop, against which the nuts are successively pushed, in order to adjust them to the proper position relative to the punch. By means of the cam and lever the gauge bar is thrust across the path of the blank, so as to intercept it and prevent its further forward movement, and is retained in that position until the punching has been effected, when the cam having passed from against the lever, a spring draws the gauge bar back out of the way, and thus permits the punched nut to be pushed forward by the column of blanks which succeed it.

Claim.—The combination of the wheel A, projecting cam B, lever C *a*, slide F, and spring G, when constructed, arranged, and operating as herein specified.

No. 46,338.—MARCELLUS V. CUMMINGS, Winthrop, Me.—*Railroad Switch.*—February 14, 1865.—This invention relates to a railroad switch of that class which is commonly termed self-acting—that is to say, is set by the train itself so as to form a connection with the rails of the track on which the train is to pass.

Claim.—The two frog bars I I′, bent or L-shaped levers E G connected with the frog bars and the switch rails, substantially as and for the purpose herein set forth.

Also, the suspended arms K K′, arranged respectively with the bar F and lever J, substantially as and for the purpose specified.

No. 46,339.—JOHN DALEY and JOSEPH H. MARVILLE, Philadelphia, Penn.—*Tool for Scaling Tubes to Boilers.*—February 14, 1865.—The object of this invention is to remove the scale or incrustation from the internal surface of the tubes of steam boilers, and to perform this process with facility. Its novelty consists in the combination and arrangement of the cutters in the cutter stock, the screw shaft, the circular cutter, and the two guides.

Claim.—First, the combination and arrangement of the cutters *a b* in the cutter stock A, the cutter stock being operated by the central screw shaft C, substantially as herein set forth.

Second, the combination and arrangement of the circular cutter B with the cutter stock A, substantially as and for the purpose set forth.

Third, the combination of the guide D with the screw shaft C, arranged in relation to the tubes, substantially as and for the purpose set forth.

Fourth, the combination of the guide F with the screw shaft C, substantially in the manner described and for the purpose specified.

No. 46,340.—M. P. DORSCH, New York, N. Y.—*Machine for Making Paper Collars.*—February 14, 1865.—A platen moving vertically carries upon its face, or under side, first, the embossing and punching parts, and, secondly, the excising die. The platen is moved reciprocally by an eccentric upon a horizontal shaft above. The platen operates in its movements a clamping frame-work which carries the paper forward a distance equal to the width of the collar, after every impression or descent of the platen.

Claim.—The reciprocating feeding frame with the sides thereof grooved to receive the sheet of paper, in combination with the griping fingers, substantially as described, and having a mode of operation such as described and for the purpose specified.

Also, the reciprocating feeding frame with its griping fingers, operating substantially as herein described, in combination with the dies for embossing and cutting the collars, substantially as described.

No. 46,341.—DAVID H. DOTERER, Philadelphia, Penn.—*Construction of Railway Cars.*—February 14, 1865.—This invention consists in constructing the sides and ends of a car body of successive layers of wood, of any required width and thickness, cemented and bolted together so that the full strength of the material is preserved, and the usual mode of framing by means of mortises and tenons obviated. It also consists in stiffening and strengthening the side of said car body, by the use of tubes, through which the clamping bolts are passed; said tubes and bolts being enclosed within the sides of the body and recessed into the sills and cap pieces. The car body is constructed of two or more sections, which are so put together that should one end or section be injured it can be readily detached from the other end or section, and a perfect one substituted for it, so that a damaged car may be quickly repaired.

Claim.—First, a car body which is composed of successive horizontal layers or strips of wood secured one upon the other by means of cement and metal clamping rods *c c*, substantially as described.

Second, the use of tubes *a a* in combination with the clamping rods *c c* and a car body, constructed substantially as described.

Third, constructing a car body of two or more sections, put together in such manner that they can be separated at pleasure, substantially as described.

Fourth, the method of applying the links *e e* to the ends of the sections of a car body, substantially as described.

No. 46,342.—JAMES B. EADS, St. Louis, Mo.—*Operating Ordnance.*—February 14, 1865.—In this invention the gun is supported on its carriage by a combination of arms or links so arranged as to force the gun to oscillate about a point at its muzzle when being elevated or deflected. The chassis of the gun in like manner is so controlled by link-connections as to train the gun horizontally about a point at the muzzle of the gun; this point being forward of the mechanical devices by which these radial movements are effected.

Claim.—First, supporting a gun of two different points in its length by a combination of devices on a gun carriage acting in connection with each other in such a manner as to rigidly compel the gun whenever it is moved in a vertical plane to rotate about a point in advance of said devices and at or near its muzzle.

Second, controlling the horizontal movements of the chassis or lower carriage which supports the gun carriage by a combination of devices acting in connection with each other upon the chassis at two different points in the length of the latter in such a manner as to rigidly compel its longitudinal axis to rotate about a point in advance of the chassis and the devices which control its movements, so that the centre of rotation may be on the exterior of a defence wall, while the devices are on the inner side of it at some considerable distance from the centre of rotation.

Third, the use of the axis 6, figure 1, at a point not the centre of rotation of the chassis, when used in combination with other devices for the purpose of producing a centre of rotation for the chassis at a different point from said axis.

Fourth, the use of axis 6, figure 1, at a point not the centre of rotation of the chassis, when used as a channel for the conveyance of power to operate the gun.

No. 46,343.—CHARLES W. FOGG, Waltham, Mass.—*Watch.*—February 14, 1865.—This invention consists in attaching one of the pinions of the train to its arbor, by means of a screw thread, so that when it is driven in the direction it is intended to turn, it will be down in its place and in gear, but in the event of the breakage of the main spring, the force of the recoil will cause it to revolve in the opposite direction, when it will rise on its arbor out of gear with the wheel into which it takes, thereby avoiding all liability of derangement of the train.

Claim.—Attaching one of the pinions of the train to its arbor by means of a screw thread, substantially as set forth, for the purpose specified.

No. 46,344.—CLINTON FOSTER, Prairie City, Ill.—*Seeding Machine.*—February 14, 1865.—This invention consists in placing the seed-boxes and seed-distributing devices within the wheels of the machine; the seed passes through openings in the periphery of the wheels, and is pressed into the earth by means of circular rotating disks, placed also within the wheels, and which project through the openings above mentioned.

Claim.—First, the main wheels B B, which revolve upon the hollow fixed axles, with the flange *b* that opens the furrows to receive the seed through the open spaces *c* between the flanges *b b*.

Second, the hollow axles E E in combination with the sliding rod M, screw shafts F, and circular disks I, all arranged to operate substantially as and for the purpose specified.

Third, the circular disks I, in combination with the wheels B, the latter being provided with spaces C, and the former provided with notches *e*, all arranged substantially as and for the purpose set forth.

No. 46,345.—NATHANIEL C. FOWLER, Yarmouth Port, Mass.—*Artificial Teeth.*—February 14, 1865.—In this invention the "palate-plate" and "guard-plate" in sets of artificial teeth are constructed of hardened wrought aluminum which is secured to a plate of vulcanite by means of tapering holes made in the metal into which the vulcanite is forced.

Claim.—The combination as well as the arrangement of the metallic guard-plate C, the vulcanite D, and the metallic inner plate B, applied to artificial teeth substantially as specified.

Also, the combination of the series of tapering holes, *b* or *c* with the aluminum plate in which they are formed, the vulcanite and the artificial teeth, substantially as specified.

Also, as an improved manufacture, a set of any suitable number of artificial teeth and one or more aluminum plates combined by means of a composition, as hereinbefore described, or its equivalent.

No. 46,346.—NATHANIEL C. FOWLER, Yarmouth Port, Mass.—*Artificial Teeth.*—February 14, 1865.—This invention consists in securing an aluminum plate to the vulcanite base, by means of hooks or staples which are punched out from the plate and form part of it; also, in the use of tapering holes, into which the vulcanite is pressed and thus secured to the plate.

Claim.—The improved manufacture of aluminum suction plate for dental purposes—that is, with holes and hooks or staples combined with it, and made by means substantially as specified.

No. 46,347.—Nathaniel C. Fowler, Yarmouth Port, Mass.—*Combination of alloys of Aluminum with Vulcanite.*—February 14, 1865.—This invention is designed as a modification of the invention for which letters patent were issued to the same inventor, dated February 7, 1865. The improvement consists in using the alloys of aluminum or other metals coated with aluminum, instead of pure aluminum as proposed in the former patent. The object of this improvement is either to economize the use of aluminum, or to produce an alloy of better color.

Claim.—First, the combination of an alloy of aluminum with vulcanite, when the said alloy is used as means of attachment to or in contact with vulcanite, or as a means of attachment to other material exposed to the vulcanizing process.

Second, the combination with vulcanite of metals coated or plated with aluminum or its alloys, in which the said coating or covering is in contact with the vulcanite or exposed to the process of vulcanization.

No. 46,348.—G. C. Gillette, Richfield, British Columbia.—*Parallel Ruler.*—February 14, 1865.—This invention consists in connecting the two bars of a parallel ruler by levers, joined together by two cogged bars in such a manner that the instrument is made to open vertically, thus avoiding errors arising from unequal wear of the joints. The invention also consists in combining with the parallel rulers a graduated limb, in such a manner that the same distances which are laid horizontally by one of the bars of the ruler can be laid off vertically by the said limb.

Claim.—First, the levers *d d d' d'*, joined together by the cogged bars *e e*, in combination with the bars A A' of a parallel ruler, constructed and operating substantially in the manner and for the purpose herein shown and described.

Second, the graduated limb *c*, applied in combination with the two parts of the parallel ruler, substantially as set forth, for the purpose of laying off vertically the same distance which can be measured horizontally on the bar.

No. 46,349.—Samuel Gulick, Kline's Grove, Penn.—*Cultivator.*—February 14, 1865.—This invention consists in a frame mounted on an axle with two wheels. It also has an auxiliary frame inside of the main frame, pivoted at the front end, to which a lateral motion may be given by means of foot levers, and also by a long lever projecting in the rear of the main frame. The ploughs are raised by means of chains attached to the plough beams and passing over pulleys upon a shaft in which a lever is secured for the purpose.

Claim.—The frame D fitted on the axle A, and connected by chains or cords E E to fast pulleys F F, on a shaft G, which has its bearings on uprights C C, attached to the axle, and which serve as guides for frame D', all being arranged as shown with a lever and notched bar, or their equivalents, whereby said frame may be raised and lowered bodily and secured at any desired height for the purpose specified.

Also, the pivoted bars Q Q when applied to and used in combination with the adjustable frame D, substantially as and for the purpose set forth.

No. 46,350.—John D. Hall, Philadelphia, Penn.—*Bread and Meat Slicer.*—February 14, 1865.—The cutting edge is in the form of a geometrical spiral, upon a tapering shaft. The material to be cut is placed in a trough, the bottom of which is corrugated to prevent the sliding or twisting of the material during the operation. An automatic feed-gauge, against which the material to be cut is pressed by hand, is adjusted so as to regulate the thickness of the slice at pleasure, and is kept continually at the proper distance in advance of the cutting edge during its revolution, so as to allow the slice to be inclined by the wedging pressure of the cutter, and finally to fall down as soon as it is cut entirely off.

Claim.—The combination of the rotary cutter C with the cam K and feed-gauge H, for the purposes specified; and in combination with the above, corrugating the interior surface of the trough D, for the purpose set forth.

No. 46,351.—Josiah C. Hamilton and Henry W. Hamilton, Washington, D. C.—*Windlass for Operating the Centre-boards of Vessels.*—February 14, 1865.—This invention is explained by the claim.

Claim.—The application and arrangement of a conical screw drum on the deck or other place of a vessel, in combination with the centre-board, whereby the slack to the rope or chain produced by the buoyancy of the water pressing the board upward, is taken up by the increased surface of the drum in its revolution, substantially in the manner described.

No. 46,352,—Nathan Harper, Newark, N. J.—*Turning Lathes.*—February 14, 1865.—The object of this invention is to produce a lathe to expedite the turning of irregular or straight surfaces, and it consists in placing a form or pattern of the shape to be turned so that a tool stock, which is in two parts, one part sliding in the other, and each carrying tools, and through which the object to be turned passes. One of these tools is free to play at right angles to the axis of the stuff, and the other cutter moves in a line parallel with the centre of the object to be turned. The sliding part of the tool carrier is so arranged that its movement at right angles is controlled by two pins projecting from the slide and bearing on the form or pattern while being fed along by a feed screw to its work.

Claim.—First, the use of slides carrying cutters having free play in a plane at right angles to the axis of the stuff or thing being cut, in combination with springs and shaping bars.

Second, the use of a compound sliding rest, consisting of a slide carrying a cutter that moves in a straight line parallel with the centre of the thing being cut, in combination with a slide or slides carrying a cutter adapted to move in a plane at right angles to the axis of the thing being cut or shaped.

No. 46,353.—JAMES W. HARRISON, Washington, D. C.—*Machine for Making Book Covers.*—February 14, 1865.—In this invention a set of adjustable gauges hold the covers and back in place, while folding wings are made to turn the cloth or paper over the edges.

Claim.—First, the gauge, the same being so constructed as to form a box or receptacle to contain a quantity of back linings, and so operated as to place them automatically one at a time in the "case;" at the same time the gauge is in its position for placing the pasteboards as described, for the purpose herein set forth.

Second, in combination with the adjustable back gauge, the adjustable automatic folding wings, the same being operated by cams or foot pedals, levers, and springs, for the purpose of turning over and securing the cloth on the "cases" in making book covers, as herein specified.

No. 46,354.—HENRY HARROP, Greenwich, N. Y.—*Mode of Ornamenting.*—February 14, 1865.—This invention consists in the printing of lithographic designs, which are transferred to the articles to be ornamented after the transfers are bronzed or gilt, &c.

Claim.—The mode or process, substantially as herein described and set forth, for ornamenting or decorating articles of manufacture.

No. 46,355.—SAMUEL HENRY, Chenoa, Ill.—*Cultivator.*—February 14, 1865.—This invention consists in an arrangement of levers for raising the plough beams. A lever has its fulcrum upon a cross-piece in front of the axle. Straps are connected with its front, and lift the front plough beam. A few inches in the rear of the fulcrum a pendant operates upon the end of the near plough beams, thus lifting both beams at one motion of a single lever.

Claim.—The arrangement of the levers J J, connected by straps *h* to the pivoted frame F G, and by pendants K K to the plough beams L L, which are hinged to the axle, the said frame F G being further capable of lateral deflection by pressure of the feet of the driver, substantially as and for the purposes described.

No. 46,356.—BENJAMIN B. and JOHN R. HILL, Worcester, Mass.—*Box Traps for Animals.*—February 14, 1865.—This invention consists of an ordinary box or four-sided trap, with the bottom extended at both ends. Two spring detents are so arranged on these extensions that when the two end doors fall by their own weight, being released by the animal at the bait, they pass over the springs, pressing them down, and the doors, when closed, are locked by the springs, which rise up behind them, forming automatic detents.

Claim.—The locking catches D D D D, when constructed and operating in the manner and for the purposes above set forth.

No. 46,357.—N. HILL, Caton, N. Y.—*Carpet Stretcher.*—February 14, 1865.—This invention consists of two flat blocks having their lower surfaces provided with a series of points, and two stretching bars, each composed of two parts capable of moving or sliding one over the other, and held together by bands attached to their extremities.

Claim.—The combination of the duplicate extension bars B B′, provided with bands C C C C, and locking pins D D, with the spur blocks A A′, whereby I secure the required range and efficiency, as well as compactness for transportation, substantially as described.

No. 46,358.—JAMES B. HODGSKIN, New York, N. Y.—*Pencil Point Protector and Mark Eraser.*—February 14, 1865.—This invention consists in providing the sleeve with a sunken band, to prevent the pencil point from entering too far, and of having a piece of India-rubber inserted at the opposite end.

Claim.—The pencil-point protector and pencil-mark eraser made by combining the sleeve or band B, provided with inwardly projecting groove, or equivalent internal projection or projections, with the rubber eraser C, substantially as herein described, as a new article of manufacture.

No. 46,359.—JAMES HOLLAND, Conshohocken, Penn.—*Barrel for Holding Petroleum and other Oils.*—February 14, 1865.—This invention consists in providing a barrel with an inner casing of such a size as to leave a space between it and the inner surface of the barrel; this space being filled with a composition of coal, tan, and roofing cement.

Claim.—A barrel composed of the outer casing A and the inner casing B, in combination with an intervening body of cement or equivalent material, substantially as specified.

No. 46,360.—NICHOLAS HOTZ, Brooklyn, N. Y.—*Pump.*—February 14, 1865.—The vertical cylinder in this pump has an induction pipe from the well opening into one side of its bottom plate. There are two pistons—one carried by a rod passing through the top, the

other carried by a rod passing upwards through the bottom plate. These pistons, which have flap-valves seated upon them, are moved from and towards each other by the operation of a brake on top, which works one rod within the cylinder and another without, the latter being so linked to the lower piston rod below the cylinder as to move the same upwards as the upper one descends.

Claim.—The sliding rods C C^2, guides D, links N' N^2, and arms c' c^2, in combination with the hand lever M and the two movable valve boxes B' B^2, all arranged and operating together as herein set forth.

No. 46,361.—CHARLES H. HUDSON, New York, N. Y.—*Attachment for Washboard.*—February 14, 1865.—This invention consists of devices so arranged that the common washboard and the rubbing attachments can all be folded up within a small compass.

Claim—First, the changable or folding washboard mechanism herein described, the standards B B being hinged to the sides of the washboard by means of pins *b* standing in the slots *a'* adapted to fit over *c*, to hold the parts rigidly or release them for folding when desired, substantially as and for the purpose herein set forth.

Second, the bracketed plates G I G I hinged on the arms E E, rigidly connected together by the brace J, and carrying two or more rollers H H, substantially as and for the purpose herein set forth.

No. 46,362.—D. F. HUMPHREY, Saline, Mich.—*Plough.*—February 14, 1865.—This invention consists in an adjustable landside pivoted at its forward end with a hook in the landside proper, and adjustable at its rear end by a slot, notched washer, nut, and screw-bolt.

Claim.—The movable or adjustable landside C, provided at or near its forward end with a hook which engages with a hole in the landside A, and fixed adjustably in a vertical slot in the latter by means of the notches *g*, the notched washer *e*, and the screw-bolt and nut *c f*, as described and represented.

No. 46,363.—JOHN H. IRWIN, Chicago, Ill.—*Burner for Lamps and Lanterns.*—February 14, 1865.—This invention consists in the employment of two or more wicks in one wick tube with a partition between them, and operated independently by two ratchet wheels, so that the flame may be made to burn evenly, in combination with a single slotted cone.

Claim.—First, the employment of two or more wicks, arranged and operating as shown and described, in combination with the single slotted cone, substantially as and for the purposes herein specified and shown.

Second, providing the wick tube with the partitions *a'*, as and for the purposes specified.

Third, the combination of two or more wick regulators E' and F, as shown and described.

No. 46,364.—JOHN F. KELLER, Greencastle, Penn —*Seed Planter.*—February 14, 1865.—In this machine a solid roller is used in combination with an elastic roller in the seeding device; between the rollers is fitted an adjustable gauge piece with a point fitting down between the rollers, and just above, a cast-iron slide fitting also accurately to the rollers.

Claim.—First, the above-described inelastic roller, in combination with the elastic roller, as a pair of feed rollers for wheat drills or other seed planters, substantially as set forth.

Second, the peculiar adjustable gauge piece H, the same being provided with a point fitting down between the tops of the feed rollers, substantially in the manner and for the purposes set forth.

Third, the solid or cast-iron slide with tips or points fitting down between the tops of the rollers, substantially in the manner specified.

No. 46,365.—SETH KINMAN, Humboldt, Cal.—*Arm Supporter for Riflemen.*—February 14, 1865.—This supporter is strapped around the body, and is capable of several adjustments to suit the varied size of the wearer. The vertical piece is rigidly attached to the waist belt, and the one supporting the elbow, which is strapped to it, having a perfectly free movement, suitable to the natural motion of the person's arm. When desirable, this can have a bearing against the vertical piece, thus forming a firm support or rest to steady the arm when firing. It can be unshipped by the slightest movement of the arm.

Claim.—First, an arm supporter and rest, constructed and operating substantially as herein set forth and described.

Second, the combination of the base or band A and bars E and F, constructed as described.

Third, the bar F, provided with an arm piece D, and jointed to a support E in such a manner that said bar may be fixed as a rigid support for the arm or made to vibrate freely, as required, substantially as set forth.

No. 46,366.—J. W. LATCHER, Northville, N. Y.—*Railroad Car Brake.*—February 14, 1865.—In the operation of this brake the greatest strain required to stop the wheel acts upon each end of single pieces of an iron plate or shoe, secured upon the inside of said plate, and, owing to the concavity of the shoes corresponding with the convexity of the wheels, it will not fall upon the track, should some one of its minor parts give way, as in the case of the ordinary brake.

Claim.—First, the employment or use of the rocking or oscillating plates B B, placed on suitable centres, and longitudinally to the truck, and centrally between and in front of the wheels, and actuated by means of the links C C toward each other and against the wheels, in the manner and for the purpose substantially as described.

Second, the use of the toggle links C C, in combination with plates B B, for the purpose of rocking or actuating the plates B B, as set forth.

No. 46,367.—Joseph F. Letellier, Grand Rapids, Mich.—*Water Wheel.*—February 14, 1865.—The novelty of this invention consists in having the scroll and buckets arranged angularly in such a manner that the water will act upon the wheel nearer to its periphery than in the ordinary wheels of similar construction, the object being to produce a greater mechanical effect by giving a greater leverage, and to facilitate the discharge of the water from the wheel.

Claim.—A horizontal water wheel, provided with a scroll, having its bottom formed of a spiral plane longitudinally, and inclined transversely, in combination with the inclined buckets of the wheel, all arranged substantially as herein set forth.

No. 46,368.—Wm. A. Lighthall, New York, N. Y.—*Condenser and Refrigerator.*—February 14, 1865.—This invention consists in the arrangement of the nozzles for the induction of the injection water to be cooled, and of the sea water for cooling it, in such a manner that the water to be cooled shall be made to pass across and around the outside of the tubes, while the cooling water passes through them in contradistinction to the reverse of this operation.

Claim.—The combination of the case A, tubes B, and division plates C, with the nozzles D and E, for the reception and delivery of the cooling water, and the nozzles F and G, for the reception and delivery of the injection water, when the said nozzles are arranged in relation to each other and to the case, tubes, and division plates, as and for the purpose herein set forth.

No. 46,369.—Thomas M. Lozie, Elmira, N. Y.—*Stove-pipe Thimble.*—February 14, 1865.—This invention consists of a stove-pipe thimble, composed of a series of rings, and a register, fitted together by hooks or projections and corresponding nicks.

Claim.—A stove-pipe thimble, composed of a series of rings B C D and register E, fitted together by hooks or projections *d c f* and corresponding nicks *d e f*, substantially as and for the purposes set forth.

No. 46,370.—John H. Mabbitt, Mechanicsville, N. Y.—*Machine for Making Wrought-iron Railroad Chairs.*—February 14, 1865.—This machine is intended to make railroad chairs out of plates of wrought iron of the kind described in the said Mabbitt's patent, dated December 2, 1862, and comprises a movable cutting and punching die, working in conjunction with a permanent lower die and a movable die, working within it—the movable dies working vertically, and operated, the former by an eccentric wrist pin in the end of a shaft, and the latter by a cam. In its operation a rectangular piece is first cut out of the plate, and then, the lower movable die receding out of the way, the upper die, continues to descend, shearing the metal back from each angle of the opening previously made by the punch, and, by virtue of its peculiar shape, bending the portions thus sheared back against the inner surface of the permanent die, giving to the two tongues thus formed the proper curvature.

Claim.—The employment of the said upper and movable die F, and the said lower and fixed die E, and said vertical-moving centre die C operating within said fixed die E, each constructed and combined in the manner and for the purposes substantially as herein described and set forth.

Also, the said vertical-moving centre die C, in combination with the said lower and fixed die E and with the cam D, in the manner and for the purposes substantially as herein described and set forth.

Also, the cutting and punching in the said prepared chair plate or bar the said plate or recess by means of the said die or punch *c*, or its equivalent, so as to allow the said inner and outer lips to be cut, punched, swedged, and formed from said chair plate or prepared bar in a more quick, easy, and substantial manner, substantially as herein described and set forth.

Also, the combination of the cam or eccentric D with the moving vertical centre punch or die C, substantially in the manner and for the purposes herein described and set forth.

No. 46,371.—Henry F. Mann, Pittsburg, Penn.—*Machine for Rolling Metal.*—February 14, 1865.—This machine consists of two supporting rolls, arranged with their surfaces in contact with rolls of smaller diameter, and placed above the upper roll of small diameter and below the lower one, for the purpose of supporting rolls of small diameter for rolling metallic sheets, bars, or plates.

Claim.—The use of two supporting rolls, or their equivalent, placed with their surfaces in contact with small diameter-working rolls placed above the upper small diameter-working

roll and below the lower one, whether an intermediate roll of larger diameter is used or not, for the purpose of supporting working rolls of small diameter for rolling metallic sheets, bars, or plates, substantially in the manner hereinbefore described.

Also, the use of two small diameter rolls, in combination with an intermediate roll of larger diameter, the small diameter rolls being supported as hereinbefore described, the term small diameter being used relatively to the diameter of the larger roll, and not as otherwise limiting or defining the diameter of the smaller rolls.

No. 46,372.—F. B. MARBLE, Columbus, Ohio.—*Machine for Dressing the Throats in Plane Stocks.*—February 14, 1865.—This invention consists in the combination of a rotary travelling cutter, with an oblique adjustable rest and clamp. Upon the vertical face of the rest is a gauge. A rotating planing cutter is also employed, having cutting edges on its periphery and on its face, and used in connection with an adjustable stop gauge applied to the frame.

Claim.—First, the combination and arrangement of the rotary travelling cutter N and oblique adjustable rest and clamp *j t*, substantially as and for the purposes described.

Second, the application of the gauge *k* to the vertical face of the pivoted rest of a machine for planing the throats of plane stocks, substantially as and for the purposes described.

Third, the rotating planing cutter N, with cutting edges on its periphery and on its face, arranged and operating substantially in the manner and for the purpose described.

Fourth, the combination in a machine for cutting the throats of plane stocks, of the rest *j*, gauge *k*, clamp *t*, horizontally adjustable bed H, vertically adjustable table G, and a travelling cutter, constructed and operated substantially as described.

Fifth, the pivoted adjustable clamping rest and gauge *j k t*, constructed and operated substantially as and for the purposes herein described.

Sixth, the adjustable stop gauge *c*, applied to a frame A, in combination with a travelling rotary cutter N and stock-holding bed H, substantially as and for the purpose described.

No. 46,373.—CHAS. W. and WM. W. MARSH, Clinton, Ill.—*Harvesters.*—February 14, 1865.—This invention relates to that class of machines which employ an endless apron arranged behind the cutting apparatus to receive the grain as it is cut, and by the rotation of which the grain is discharged at the stubble end of the cutting apparatus. It consists in the employment, in connection with such belt or apron, of a scalloped gatherer attached to the frame-end of the finger-bar, and provided with a hinged extension reaching back over the inner end of the belt, for the purpose of laying the straws evenly thereon; a peculiarly constructed scraper being employed to keep the apron-rollers clear of obstructing straws, &c.

Claim.—The scalloped gatherer D, provided with the hinged extension *d*, as described, when used in connection with the band B, substantially as and for the purpose specified.

Also, the scraper E for the roller C, when constructed as described, and used with the endless band B, for the purpose specified.

No. 46,374.—JOHN M. MAYER, New York, N. Y.—*Machine for Hulling and Cleaning Grain.*—February 14, 1865.—This invention consists in a revolving wire-gauze cylinder, provided with a series of circular rough surface shelves, in combination with an internal fan blower, and with an external case, provided with a series of semicircular conduits, arranged in such relation to the circular rough surface shelves of the wire-gauze cylinder that the wheat or other material dropped in the first shelf passes to the second and third, from the third to the fifth, and so forth, and from the second to the fourth, and so on, and in its course over the several rough surface shelves it is thoroughly divested of its peel, and discharged in a comparatively pure state.

Claim.—The revolving perforated cylinder A, with circular shelves E, in combination with the semicircular conduits *d* and case F, constructed and operating substantially as and for the purposes set forth.

No. 46,375.—A. S. MCINTIRE and NATHANIEL STEVENS THOMPSON, Stoneham, Mass.—*Toe Piece for Lasting Machine.*—February 14, 1865.—This invention, relating to a mode of forming the toe piece of gutta-percha, or other similar substance, in a pliable state, consists in using a part of the lasting machine and an unfinished shoe on the last for a mould.

Claim.—The method of forming a toe piece for lasting machines of any suitable material, by means of the lasted shoe and the jaw lasting machine, substantially and for the purpose as herein described.

No. 46,376.—ELIAS MINNICH, McKee's Half Falls, Penn.—*Cultivator.*—February 14, 1865.—This invention consists in two oblong hoes or shares attached to upright supports that turn on pivots in the cultivator frame; these supports are braced to the tongue at their front and rear ends, and by lengthening or shortening either brace the shares are set at a greater or less angle. In combination with the shares are two long curved steel teeth or rakes for clearing away weeds.

Claim.—The arrangement of the braces M M, connecting the ploughshares to the tongue, with the teeth or rake L, as arranged and combined with the angular-shaped frame E, as herein described and for the purposes set forth.

No. 46,377.—Thos. S. Minniss, Meadville, Penn.—*Mode of Hanging Gates.*—February 14, 1865.—In this invention the gate is suspended by means of a pulley resting upon a rocking beam or way. This rocking beam is tilted by means of a cord at either end, which causes the gate to run off to one side and thus open a passage; by releasing the hold upon the cord, and pulling at the opposite end, the gate closes by its own gravity.

Claim.—The gate A, shifting lever I, and cords O, the several parts being constructed, arranged, and operating as and for the purpose set forth.

No. 46,378.—Samuel H. Mitchell, El Paso, Ill.—*Gang Plough and Cultivator.*—February 14, 1865.—This invention consists in making the split ends of the draught-pole serve as parts of the frame. The split ends are fastened upon the axle, and have three parallel bars fastened to them; two in front for fastening the ends of the plough-beams, and one in the rear for lifting the ploughs by its rotation.

Claim.—The split and expanded draught-pole C, in connection with the axle A and bar E and O and rods *h*, all arranged as and for the purpose herein set forth.

No. 46,379.—H. B. Myers, Schoolcraft, Mich.—*Self-setting Animal Trap.*—February 14, 1865.—In this invention a tilting platform is operated by pulling at the bait. The animal is let into a receptacle below, whilst the trap is reset by a pendulous detent having guide grooves in it, bringing the platform to its normal position.

Claim.—The combination of the pendulous detent E, provided with the groove or channel *h i h*, and resetting itself by its own gravity with the fixed bait hook *d*, the weighted platform, and the box of the trap, substantially as above described.

No. 46,380.—Thomas J. Newland, Utica, N. Y.—*Locomotive Head Light.*—February 14, 1865.—This invention consists in the combination and arrangement of four hollow cylinders, the inner one having bevelled ends to facilitate the delivery of the air to the point of combustion in connection with a mode of elevating and lowering the wick.

Claim.—The combination and arrangement of the barrels or cylinders A B C and D, used and operating substantially in the manner and for the purpose mentioned.

Also, the bevelled ends of the inner cylinder D, separately and in combination, used and operating substantially in the manner and for the purposes mentioned.

No. 46,381.—Ambrose J. Nichols, Providence, R. I.—*Expansible Reed for Warp Dressing and Weaving.*—February 14, 1865.—The object of this invention is to adapt the reed to the different lengths of the beams. The ribs are made of India-rubber or other elastic material and are sustained and guided in grooves in the longitudinal rails of the frame. By turning the screws the crossbars are drawn up against the end rails of the frame; the ribs are lengthened, and the darts are spread, and *vice versa*.

Claim.—The combination of the crossbars *c c*, and screws *e*, with the elastic ribs *a a* and grooved frame A, all constructed and arranged as and for the purpose herein specified.

No. 46,382.—Marcus Ormsbee, New York, N. Y.—*Picture Frame.*—February 14, 1865.—This invention consists in punching or cutting tongues in a sheet-metal, back so that they can be used as supports to sustain the frame in any particular position.

Claim.—The flexible plate forming the back of a picture frame, in combination with the tongues or lips cut out of and made from the back or plate to form attachments or supports to the picture, substantially as herein described.

No. 46,383.—Ira A. Palmer, Monmouth, Ill.—*Cultivator.*—February 14, 1865.—This invention consists in making the frame of V-shape to render it light and strong; also in a draught equalizer formed of two rods with arms at right angles, throwing the whiffletrees outside the rods; and also in attaching the plough beams with a vertical adjustment to a short perpendicular wooden bar, turning on a pivot, so as to be adjusted laterally.

Claim.—First, the draught equalizer composed of the rods D D, provided with arms *d d'* at their upper and lower ends, and placed at right angles to each other, with the lower arms projecting at right angles from the machine, with the upper arms *d* connected by a rod E, and the whiffletrees attached to the lower arms *d'*, substantially as and for the purpose set forth.

Second, connecting the plough beams E to the bars *c* of the main frame A, through the medium of the bars *k*, which work on adjustable pins or rods *l*, in plates *m*, attached to the bars *c*, and the pins *j*, which pass through plates *i*, attached to the plough beams and through the bars *k*, all being arranged substantially as and for the purpose specified.

Third, the particular manner of constructing the main frame A, to wit, of the side bars *a a* arranged in V-form, connected at their upper ends by crossbars *b b*, and mounted on wheels B, substantially as herein set forth.

No. 46,384.—Daniel L. Pratt, Bridgeport, Ohio.—*Manufacture of Sheet Iron.*—February 14, 1865.—This invention consists in immersing the sheet metal in a bath composed of a mixture of organic and inorganic acids, the solution being heated to 150° Fah., and the metal remaining therein from three to twelve hours. The metal is then taken from the bath,

washed and scrubbed, and immersed in an alkaline solution consisting of water and carbonate of potash, the said bath being also heated to 150° Fah. The metal is then taken out and passed between two wheel brushes, jets of water being thrown upon each brush during the operation, after which it is heated until perfectly dry. It is then placed in a bath of animal oil at 100° or 150° Fah., and allowed to remain ten or fifteen minutes, when it is taken out and dripped, and passed between two polished chilled iron rollers, after which it is passed between wooden rollers covered with leather, the sheet being dusted during the operation, with powdered chalk or brick dust. It is then colored by being placed over a bed of burning charcoal until it acquires the requisite shade.

Claim.—First, the herein described series of processes, substantially as described.

Second, subjecting the sheet iron, after it has been cleansed of its scale and of the operating chemicals and water, to a bath or coating of oil, which is rolled in cold, or at a temperature that will not dissipate the oil.

Third, subjecting the sheet, after it has been removed from the bath of alkaline solution, to the action of revolving brushes, upon each of which a jet or stream of water is thrown.

Fourth, the combination of an organic and mineral acid in the aciduous bath, substantially as described.

No. 46,385.—Thomas E. Purchase, Reading, Penn.—*Retaining and Releasing Hooks.*—February 14, 1865.—This invention consists of a retaining and releasing hook, to the body of which is connected a pawl and spring lever, the whole being constructed so that the object retained by the hook may be instantly released on striking the said spring lever.

Claim.—The within described retaining hook, consisting of a body A, pawl E, and spring lever B, all constructed and arranged substantially as set forth.

No. 46,386.—Thomas Pye, New Hartford, N. Y.—*Spinning Machine.*—February 14, 1865.—The object of this invention is to relieve the hand labor of the spinner in running up the jack and tightening the threads to make a hard bobbin; and also to save the belt from the wear of abrasion on the tight pulley when that pulley is stationary. The belt is designed to be kept entirely from the tight pulley, while adjusting the thread on the bobbins preparatory to winding up, and then partially thrown back to assist in the return of the jack, thus relieving the operation from friction when not needed, and restoring so much of it as is useful when required.

Claim.—The improvements in the operations of the spinning jack in woollen manufactories, as I have described it, consisting of the levers *a c* and *d*, the slide bolts *n* and *x*, and the lifter A O, figure 1, the weight and lever D E, figure 2, and the sheave *t*, figure 3, with their connections, adjustment, and adaptation, as described, and for the purposes described, the whole being arranged, combined, and operating substantially in the manner herein set forth.

No. 46,387.—Peter Rauch, South Lebanon, Penn.—*Mode of Curing Tobacco.*—February 14, 1865.—This invention consists in the employment of a nest of three rectangular boxes, each having perforated slides. The tobacco is placed in the smaller or inside box, to which a screw is attached for the purpose of pressing the tobacco. The ventilation is regulated by the perforated slides.

Claim.—The mode and manner of regulating and ventilating the curing of tobacco by the single or double ventilating boxes and packing, as herein described, and for the purposes set forth.

No. 46,388.—George M. Ramsey, New York, N. Y.—*Railroad Rail Joint.*—February 14, 1865.—This invention consists of a joint for connecting the end of railroad rails so contrived as to be readily removable, and at the same time to afford a firm bearing for the tread of the wheels, and to prevent the depression of one end of a rail below that next to it.

Claim.—The combination of the mitre or lap joint, together with the clamp, substantially as described.

Also, making the slot A *a* longer than the union *c*, substantially as described.

Also, making the ends *b b* to extend beyond the end of *c*, substantially as described, for the purposes described.

No. 46,389.—J. H. Raymond and W. J. Brassington, Brooklyn, N. Y.—*Self-locking Nut.*—February 14, 1865.—This invention consists in inserting in a slot in the edge of a nut a pointed cam or pawl, which, by tightening the nut, offers no resistance, but when turned in an opposite direction bears upon the surface of the screw bolt, and prevents its further motion in that direction. By inserting a tapering pin in front, and forcing back the cam, it relieves its hold of the bolt and allows the nut to be unscrewed.

Claim.—First, the dog C, so applied within the nut and held in contact with the screw thread of the bolt by a spring that by any tendency to turn the nut in one direction the friction of the said dog on the surface of the said thread is caused to draw its point toward the centre of the bolt, and so make it bite the thread at any part of its surface, substantially as herein described.

Second, the hole *e*, in combination with the dog C and the slot *a* in the nuts, substantially as and for the purpose herein specified.

No. 46,390.—EDWIN REYNOLDS, Mansfield, Conn.—*Lithographic Printing Press.*—February 14, 1865.—In this invention the improvements are various, and apply to that kind of press in which there is an oscillating bed vibrating through the arc of a circle, a rotary tympan, and revolving ink rollers. The claim mainly sets forth the nature of the invention.

Claim.—In combination with an oscillating carriage, through which movement is imparted to the stone to ink its surface and to carry it under the tympan, and rotation is imparted to the tympan, the construction of the oscillating gears by which the tympan is kept in contact with the stone as they move in juxtaposition, when this construction is combined with mechanism which arrests the motion of the tympan, or locks it in position during the back movement of the stone.

Also, the arrangement of the mechanism for connecting the tympan gears with the tympan frame for the forward movement of the stone, and disconnecting them for the back movement of the stone, substantially as set forth.

Also, so arranging this clutching mechanism that the tympan frame can be disconnected from the tympan gears for the entire back and forth movement of the stone.

Also, so constructing the tympan frame that while one end of the tympan is stationary, with respect to the tympan cylinder, the other end is attached to a yielding bar, for the purposes substantially as described.

Also, constructing the rotary tympan frame with an open space between its two parts *l* and *k* to permit access to or removal of the scraper when the tympan is in position to bring such space beneath the scraper, substantially as shown and described.

Also, when a series of three or more ink-rollers is employed, such disposition and application of them with reference to the path of movement of the stone and the position of the main ink cylinder, that while the rollers are brought into position to rotate in contact with the flat surface of the stone as it traverses beneath them, they shall also be carried at proper times, by a series of concentric bearings, into positions around and in contact with the curved surface of the main ink cylinder, substantially as described.

No. 46,139.—JOHN RICHARDS, Columbus, Ohio.—*Machine for Mortising Plane Stocks.*—February 14, 1865.—The object of this invention is to mortise the front and rear ends of the throats of plane stocks, and it consists of a rotating boring tool, having a vibrating motion equal to the length of the width of the throat, and a hinged clamp with a gauge so arranged as that the stock can be held in the required position, and can be adjusted and set to any angle desired while being bored, the carriage being fed up to the tool by means of a spur wheel gearing into a rack on the under side of the carriage, operated by a lever attached to the end of shaft.

Claim.—First, the combination of an adjustable inclined stock holder F with a boring tool which receives a rotary motion and at the same time a vibrating motion, substantially as described.

Second, the construction of the stock support F, in combination with the bed G and clamp S′, substantially in the manner and for the purpose set forth.

Third, a gauge *p*, applied to the face of the stock holder of a machine adapted for cutting the throats in plane stocks, substantially as and for the purpose set forth.

Fourth, the combination of the stock F, adjustable clamp *s*, and rotary auger, substantially as and for the purpose set forth.

No. 46,392.—JOHN RICHARDS, Columbus, Ohio.—*Machine for Mortising Plane Stocks.*—February 14, 1865.—The object of this invention is to mortise by machinery the sides or cheeks of the throats of the plane stocks, and it consists of a rotating boring tool that has a vibratory motion equal to the length of the mortise to be cut, and a double inclined carriage, with gauges and clamps to hold the stock in position while being bored, the carriage being fed up by means of a lever attached to a shaft on which is a spur wheel gearing into a rack on the under side of the carriage.

Claim.—First, producing the cheeks on each side of the throat of a plane stock by means of a rotary vibrating auger operating in conjunction with a double inclined bed F, which is adapted for holding the stocks in a proper position to receive the auger, substantially as described.

Second, the stock holding bed F, constructed with double inclined surfaces *h h′*, and provided with gauges and clamps for holding the work in place during the operation of forming the cheeks, substantially as described.

No. 46,393.—JOHN L. RIPLEY, Frémont, Ohio.—*Horse Hay-forks.*—February 14, 1865.—This invention relates to the device for locking or fastening the fork, and will be readily understood from the claim and drawing.

Claim.—The bolt E attached to the spring H, and having the rod F connected to it by a pivot *d′*, in combination with the inclined plate I and the curved part *b* of the bar D, all arranged to operate substantially as and for the purpose herein set forth.

No. 46,394.—E. P. RUSSELL, Manlius, N. Y.—*Harvesting Machine.*—February 14, 1865.—In this machine the cutting apparatus is hinged to the draught frame by means of an angular draw bar, which serves also as a hinge and brace for the cutting apparatus, combined with a

curved sliding hanger, the parts being applied to the draught frame so as to render a single hinge joint in the cutting apparatus or its connections capable of serving "double hinge." With the curved sliding hanger is combined a curved slotted bearing guide, constructed in one piece and applied to the main frame, and upon the said hanger is formed a curved stop tooth combined with a curved lip on the shoe.

Claim.—First, hinging the cutting apparatus to the draught frame by means of an angular draw bar, which answers also as a hinge, *i*, and brace for the cutting apparatus, in combination with the curved sliding hanger C, the said parts being applied to the draught frame, substantially as shown, for the purpose of rendering a single hinge joint in the cutting apparatus or its connections capable of serving the purpose of what is known as the "double hinge" or "double rule joint," as set forth.

Second, the curved slotted bearing guide B, constructed in one piece and applied to the main frame, as described, in combination with the curved stiff hanger C, arranged and operated as set forth.

Third, the construction of the curved stop tooth *b*, formed on the hanger C, in combination with the curved lip *g'*, constructed as shown, on the shoe F, substantially as and for the purpose described.

Fourth, the transverse rigid brace and guide D, in conjunction with the curved hanger C and curved guide B, substantially as and for the purpose set forth.

Fifth, the manner shown of applying the roller *a* within the eye of the curved guide B and upon the curved hanger C, for the purpose set forth.

No. 46,395.—WILLIAM B. SCAIFE, Pittsburg, Penn.—*Brazing Brass Screws to Iron Pipes.*—February 14, 1865.—This coupling is formed in two sections, constructed so as to be screwed together, each section being provided with holes or apertures through which melted solder or other material may be poured in order to cement or permanently attach said sections to the pipes respectively, which are to be coupled together.

Claim.—As an article of manufacture a tubular coupling in two sections, constructed so as to be screwed together, each section being provided with holes or apertures through which melted solder or other material may be poured in order to cement or permanently attach said sections to the pipes respectively, which are to be coupled together.

No. 46,396.—JAMES SCOULER, San Francisco, Cal.—*Photographic Camera Stand.*—February 14, 1865.—This invention consists in having a frame on which the camera rests, made to slope at any desirable angle by means of a ratchet and spring pawl, by an arrangement of hand lever to elevate the instrument, and by a set screw for nice adjustment, all within convenient reaching distance of the operator.

Claim.—First, the skeleton platforms C C', connected to each other by a hinge joint *b* and to the frame A by a hinge *a*, to operate in combination with the spring pawls D D' and serrated bars E E', in the manner and for the purpose substantially as described.

Second, the hand lever G and bottom J, in combination with the platform C and pawl D, constructed and operating substantially as and for the purpose set forth.

Third, the adjustable serrated bar D', in combination with the platforms C C' and set screw *d*, constructed and operating as and for the purpose set forth.

No. 46,397.—JOHN B. SICCARDI and JAMES HYDE, New York, N. Y.—*Comb for combing Wool, Flax, Cotton, &c.*—February 14, 1865.—The claim and drawing convey a clear idea of this invention.

Claim.—The construction of a comb with metal points or teeth, when said teeth are passed through holes made in the plate I and secured at its back by means of a suitable cement, the whole being constructed in the manner substantially as described and specified.

No. 46,398.—J. N. SMITH, Galva, Ill.—*Corn Planter.*—February 14, 1865.—In this machine the seed boxes and furrowing devices are attached to the rear of the machine in such a way that the driver, by a hand lever and crank shaft, throws the seat forward and varies the depth of the furrow by his weight.

Claim.—Attaching the frame carrying the furrowing device and seed boxes to the forward end of the pivoted frame A, so that by the forward or rear movement of the driver's seat by means of the lever *g*, crank shaft *p*, and carriage *m*, the weight of the driver may be made to partially counterbalance the weight of the forward frame and modify the depth of the furrow.

No. 46,399.—JOSIAH T. SMITH, Springfield, Ill.—*Brick Machine.*—February 14, 1865.—This invention consists in the combined arrangement of the pulverizer mould, or plunger, with a cam, in discharging the bricks from moulds downwards, and in the movement of the bottom across the face of the plungers removing the brick.

Claim.—First, the combined arrangement of the pulverizers, moulds, or plungers, and the cam motion, for the purposes as substantially set forth.

Second, discharging the brick from the moulds downward, being the mode in which they are pressed, thus avoiding derangement in the particles of clay, leaving the brick as smooth and perfect as when pressed.

Third, the movement of the bottom across the face of the plungers, removing the brick, and perfectly cleansing the face of the plungers of any particles of clay which might adhere to them.

No. 46,400.—Charles Spofford and W. S. Bell, Jr., Boston, Mass.—*Machine for Stretching Paper Collars.*—February 14, 1865.—This invention consists in a perpendicular frame, in front of which is a table curved from its two sides downward, and at its inner end a block is so adjusted as to leave a narrow space between its lower rounded side and the surface of the table for the collar to pass curved in the direction of its length, to correspond with the surface of the table. Behind this block and the end of the table, which are in line, a smooth plate moves vertically, being divided into two sections by a line of light curvature, the sections parting by automatic means when this line is coincident with the surface of the table to receive the band part of the collar. which is immediately clamped; the rest of the collar is then drawn upward between the sliding plate and the rear part of the block, being also pressed by the roller above the block and thus distended so as to fold over the band part without creasing.

Claim.—The sliding carriage E, with its curved recess *d*, in combination with the stationary block I and cylinder L, operating substantially as set forth for the purpose specified.

No. 46,401.—Edwin C. Stiles, Portland, Me.—*Milling Machine* —February 14, 1865.—This device consists of two dies, one concave, and formed on the end of a slide mounted upon a suitable platform or frame, and adjustable by means of a set screw towards or from another die with a corresponding convex face; the latter is formed on the short arm of a lever, which, by being thrown to one side, permits the head of the screw which is held in a vertical position to be inserted between the two dies, then by operating the lever in an opposite direction, the head is caused to roll between and in contact with the two dies until it is released by the movable one passing beyond the other.

Claim.—First, producing an elastic bearing for the counter die C, or its equivalent, by means of the spring J and its set screw *d*, substantially as described.

Second, in machines for milling screw heads and other articles causing the curved face of the vibrating die B to operate in connection with the concave face of the adjustable counter die C, substantially as described.

No. 46,402.—Bernhard L. Stone, San Francisco, Cal.—*Burglar Alarm.*—February 14, 1865.—This invention consists in the employment of a clock train provided with an alarm bell, which is set by a catch over the top of a door. When the door is opened a spring bolt liberates the catch and starts the alarm.

Claim.—The arrangement of the hammers B and C, the invention of lever G and spring H, as arranged, together with the arrangement of the triangle I as attached to lever wire G, and extending from one end of the triangle I and a wire or cord Q, which is fastened to the other end of the triangle I and extends to cap K, which is also claimed as a new invention, together with the arrangement and operation of the spring door bolt L, which, by throwing off the cap K, sets the alarm in operation. The alarm continues until the machine runs down.

No. 46,403.—Asahel Tarbox, Willimantic, Conn.—*Water Elevator.*—February 14, 1865.—This invention consists in a shaft operated by a crank, which has its fulcrum upon an inner ratchet wheel, by means of a lateral dog on the crank. The eye of this crank is of ovoid form so as to bring the dog out of contact with the ratchet wheel when the hand of the operator is removed and the handle falls. The brake lever is pivoted a short distance from the cylinder, a semicircular part passing under the cylinder to be pressed upward against it. A dog inclines laterally from the lever, between the cylinder and the pivot fulcrum, so as to engage with another ratchet wheel and hold the cylinder, except when released by the hand of the operator.

Claim.—First, the combination with a rotating shaft of a loose crank which can be alternately connected with and disconnected from the shaft on which it is hung by means of its enlarged eye and a dog on the side of the crank, substantially as above described.

Second, in combination with a crank constructed and operating as above described, the brake apparatus, consisting of the lever D, its detent D2, its brake D1, and the ratchet wheel *a* and friction ring *b*, substantially as above set forth.

No. 46,404.—J. Thompson, New York, N. Y.—*Cigar Machine.*—February 14, 1865.—This invention consists in an adjustable mould, in combination with a longitudinally-sliding fork, in such a manner that the filler can be readily placed in the mould and presser, and by the action of the revolving fork the wrapper can be applied while the filler is in the mould.

Claim.—The adjustable mould C, in combination with the longitudinally-sliding revolving fork D, constructed and operating substantially as and for the purpose set forth.

No. 46,405.—Isaac P. Tice, New York, N. Y.—*Mode of Manufacturing Paper Twine.*—February 14, 1865.—The claim defines the invention, and the engraving illustrates a mode of operation.

Claim.—The manufacture of paper twine by twisting the paper in a dry state, afterwards moistening it, and subjecting it to a stretching operation while in a moist state, substantially as herein described.

No. 46,406.—GEORGE W. TOLHURST, Circleville, Ohio.—*Mop.*—February 14, 1865.—This invention consists in providing the mop cloth with two handles, and so connecting them with a link or hinge that as the mop cloth is drawn into a wringing position the handles shall be separated by the link, to allow one cross-piece of one of the handles to turn without coming in contact with the other handle.

Claim.—The combination of the handles A A′, cross-pieces B B′, and brace D, substantially as specified.

No. 46,407.—ASA M. TOMB, Lyons, N. Y.—*Machine for Polishing Marble.*—February 14, 1865.—This invention consists in producing a machine capable of polishing marble or other stone automatically. The surface is polished of any desired length or breadth without the attention of an operator, the machine being regulated and capable of adjustment to the various circumstances in which it is employed.

Claim.—The combination and arrangement of the sliding block K, way G, shaft L, double pulleys *n n*, and the band F, wound around said pulleys on opposite sides in such a manner that while said sliding block is allowed a free reciprocating motion, without unusual friction, the shaft is revolved by the band, substantially as herein set forth.

Also, the hinged way G, so arranged as to swing aside to enable the stone to be adjusted on the carriage and to serve as the guide to the sliding block K, substantially as herein described.

Also, the polishing device, consisting of the head M, radial arms *s s*, and jaws *t t*, so arranged that each set of jaws can be adjusted at varying distances from the head, substantially as and for the purpose herein specified.

Also, connecting the head M with the shaft L by means of the depressions *q q q* and arms *o o*, in such a manner as to produce a free joint, so that the polishing device will adapt itself to the surface of the stone, substantially as herein described.

Also, shifting the engagement of the pinion *f′* with the pinion *g′ h′* by means of the bar N, provided with cam *i′*, the dogs *o o*, and the shaft *k′*, provided with the pins *r*, crank and weight *n′ o′*, and cams *m′ m′*, the whole arranged, combined, and operating substantially as herein set forth.

Also, the holes *s′ s′* in the carriage B, and the shifting pins *u′ u′*, when used in combination with the rack *r′*, pinion *q′*, and shaft *k′*, for gauging the stroke of the carriage to the length of the stone, substantially as herein set forth.

No. 46,408.—WILLIAM H. TOWERS, New York, N. Y.—*Shoestring.*—February 14, 1865.—This invention consists in cutting shoestrings from raw or untanned hides, and making them soft and pliable, the ends being impervious to moisture and pointed ready for use.

Claim.—The improved shoestring or lacing made from raw or untanned hide, with the ends made impervious to moisture and pointed ready for use, substantially in the manner and for the purposes above described.

No. 46,409.—M. M. TURNER, North Fairfield, Ohio.—*Method of Finding Waist and Chest Measurement of Ladies' Dresses.*—February 14, 1865.—This method includes the use of a chart, shown and described, a knowledge of which, by the aid of the specification, is essential to an understanding of the invention.

Claim.—The method of finding the waist and chest measurement, substantially as described.

No. 46,410.—J T. WARREN, Stafford, N. Y.—*Knapsack Slings.*—February 14, 1865.—This invention consists in the construction of metallic slings, having a back strap below and yielding straps or loops above, attached to the knapsack, to conform to the shape and size of the shoulders.

Claim.—The arrangement and construction of the metallic slings E E, with their yielding straps D D and back strap G, as herein described and for the purposes set forth.

No. 46,411.—MARTIN V. B. WHITE, Troy, N. Y.—*Cartridge-box.*—February 14, 1865.—The cartridge-box, which is of a narrow, elongated, and curved form, adapted to the side of the soldier, is provided with an apron at its bottom, upon which the cartridges are placed standing in one or more rows, the said apron having at its rear or inner end a flange or upright lip to enclose the back end of the series of cartridges, and being attached at its forward end to a coiled spring, by which the cartridges are constantly pulled forward, so as always to present one at the front opening of the box.

Claim.—The employment of the apron E, with the vertical end piece I thereto attached, in combination with the inner box B and the coil spring D, in the manner and for the purposes substantially as herein described and set forth.

Also, the employment of the inner case B in combination with the outside case A, substantially as and for the purposes herein described and set forth.

Also, the removing of cartridge from the one end of the cartridge-box in the manner and by the means substantially as herein described and set forth.

No. 46,412.—RICHARDSON WILSON, Fowler, N.Y.—*Wheeled Plough.*—February 14, 1865 —In this invention the larger and smaller supporting wheels are placed upon vertical adjustable supports, the support of the larger wheel being also adjustable laterally.

Claim.—The arrangement of the vertical adjustable supports D J with regard to the beam E and the axles of the supporting wheels A H, as and for the purpose herein described and represented.

No. 46,413.—GEORGE B. WINSHIP, Boston, Mass.—*Graduated Dumb-bells.*—February 14, 1865.—In this invention a mode of graduating the weight is accomplished by making the end weights in the form of flat disks, and fastening them on the handle with spring pins.

Claim.—First, constructing graduated dumb-bells of flat disks or sections, substantially as and for the purpose described.

Second, fixing the two inmost disks 1 1 upon the handle A by means of the holes *e* and the imbedded stationary pins *c c*, substantially as described.

Third, the method of confining the removable disks or sections by means of the spring pins D and holes *b*, substantially as and for the purpose described.

Fourth, constructing the handle A of a dumb-bell of a hollow metallic cylinder, substantially as set forth and for the purposes described.

No. 46,414.—GURDON G. WOLFE, Troy, N. Y.—*Stove-pipe Ventilator and Draught Damper.*—February 14, 1865.—This invention consists of a vertical register combined with a damper in such a manner that they may be operated independently of and separately from or with the register, as may be desired.

Claim.—The employment and combination of the vertical register C with the damper E, in the manner substantially as herein described and set forth, so that the same may together be operated independent of and separate from or with the register C3, in the manner and for the purposes herein described and set forth.

No. 46,415.—WILLIAM L. WOODS, Washington, D. C.—*Paper Files.*—February 14, 1865.—This invention consists in so simplifying the form of the box to contain papers, &c., that it may be used in ordinary pigeon-holes, be ventilated, and cheap in construction.

Claim.—The file box, figures 1 and 2, in its combination with pigeon-holes or shelves in vaults, safes, and portable cases, substantially as set forth and described above.

No. 46,416.—L. W. WOODWARD, North Adams, Mass.—*Steam Trap.*—February 14, 1865.—This invention consists in a construction of steam traps in which the opening and closing thereof are caused by the alternate expansion and contraction of the pipe which forms the connection between the steam apparatus to be cleared of the water of condensation and the trap.

Claim.—The steam trap, constructed and operating substantially as above described.

No. 46,417.—THEODORE YATES, Milwaukee, Wis.—*Breech-loading Ordnance.*—February 14, 1865.—A yoke is pivoted to a projection on the under side of the gun, so that it may vibrate freely in a vertical plane, and by its vibration operate the mechanism, connecting it with the breech block in such a manner that the latter is elevated and the cap of the breech chamber withdrawn simultaneously, so as to permit the insertion of the cartridge. The latter having been inserted, the breech block is allowed to return to its place by gravitation, and in so doing operates a lever which closes again the cap of the breech chamber.

Claim.—The combination of the lever C C, cap D, and sliding breech block D, constructed and operating substantially as and for the purposes herein described.

No. 46,418.—WILLIAM B. YOUNG, Chicago, Ill.—*Plough.*—February 14, 1865.—This invention consists in forming the plough standard of a single piece of sheet iron or steel, bent or curved into the proper form, for the purpose of combining cheapness of manufacture with strength and lightness.

Claim.—A plough standard made of sheet iron or steel with upper part bent or curved, constructed and operating substantially as above described.

No. 46,419.—EDWARD BEANS, London, England, and CONRAD WILLIAM FINZEL, Bristol, England, assignors to themselves and THEO. A. HAVEMYER, New York, N. Y.—*Sugar Boiling.*—February 14, 1865.—This invention consists in the use of hot water at or near the boiling point, or steam of a pressure of one pound to the square inch, in vacuum pans for boiling sugar. In order to carry out this invention tubular vacuum pans, the tubes of which are reduced in length and increased in number according to the evaporating surface required, are used instead of the long tubular vacuum pans, or ordinary vacuum pans with worms.

Claim.—The employment or use in boiling sugar in vacuum pans of hot water at or as near as may be to the boiling point, or steam of a pressure of not more than one pound to the square inch, or as near as may be to that pressure, substantially as herein set forth, to prevent carbonization and coloring of the saccharine liquids and of the sugar.

No. 46,420.—CHARLES E. FOSTER, Philadelphia, Penn., assignor to the ROCK DRILL AND MINING COMPANY, Penn.—*Well-boring Apparatus.*—February 14, 1865.—This invention consists in combining a direct acting engine with the boring apparatus, so that the use of the usual walking beam and complex system of straps and gearing may be dispensed with.

Claim.—First, the combination, substantially as described, of one or more direct acting steam or compressed-air cylinders with a plate carrying the levers *h*, or their equivalents, and with a boring bar, for the purpose specified.

Second, the combination of the cylinder C, trunk D, levers *h*, or their equivalents, and bar F.

No. 46,421.—JAMES W. GRAY and CHARLES H. CURTIS, assignors to themselves and the SPRING PERCH COMPANY, Bridgeport, Conn.—*Machine for Straightening Elliptic Springs.*—February 14, 1865.—This invention consists in the combination of a sliding plate and jaw, operated by levers with cams and a spring, for the purpose of straightening the leaves or plates of carriage springs after they have been wrought or rolled out by a single operation.

Claim.—First, the combination of the sliding plate *a* and the jaw *d* with the table A3 and its rim *f*, constructed and operating substantially as and for the purpose above described.

Second, the combination of the levers which operate the jaw *d* and sliding plate *a* with the cams C C and the spring E, or its equivalent, all constructed substantially as above described.

No. 46,422.—R. LITTLE, assignor to himself and SAMUEL LITTLE, Canton Ohio.—*Improved Stove.*—February 14, 1865.—This invention is designed as an improvement upon a patent issued to the said Little June 12, 1864, and it consists in the application to the sides of his stove of removable reflecting plates, lined with bright metal, enclosing a small air space between the side of the stove and said plates, so arranged as to prevent the radiation of heat from the stove while cooking with it in summer, and in the winter the plates can be removed, and the room will be heated at the same time that culinary operations are conducted.

Claim.—The application to stoves of the removable lining plates B, substantially as and for the purposes described.

Also, the removable side linings B in combination with the closed sides C of the stove, substantially as herein described.

Also, the combination of the removable linings B of the stove with reflecting surfaces S, for the purpose of concentrating the heat on the stove, substantially as herein described.

No. 46,423.—JAMES PENKETH, assignor to himself and JOHN E. EASTMAN, Chicago, Ill.—*Furnace Doors for Boilers.*—February 14, 1865.—The object of this invention is to so join together the plates which form the furnace and outside boiler plate around the aperture for admission of fuel that the usual separate metallic ring is dispensed with, and the unequal expansion and consequent strain due to the necessary greater thickness of the ring thereby avoided. Its novelty consists in forming furnace openings through which fuel is passed by turning the boiler plate inwards and the furnace plate outwards, and lapping and riveting these plates together.

Claim.—Constructing the furnace doors of steam boilers by turning the boiler plate inwards and the furnace plate outwards, and lapping and riveting said plates together, substantially in the manner and for the purpose herein specified and shown.

No. 46,424.—THOMAS ROBJOHN, assignor to E. C. WOOSTER, New York, N. Y.—*Sewing Machine for Making Band Ruffling.*—February 14, 1865.—The claim, in connection with the drawing, sufficiently defines the nature of this invention.

Claim.—First, the combination with each other and with a sewing machine, of a guide for turning in the edges of and folding one strip of cloth to form a double band, a guide for guiding another strip of cloth into such band to form a ruffle, and a plaiting or ruffling knife, the whole operating substantially as herein specified.

Second, in combination with the ruffling knife, acting above the strip which is to form the ruffle, the extension of a portion of the bottom *i* of the guide F, or its equivalent, below the said knife, in such position as to be interposed between the ruffle strip and the lower part of the band, substantially as and for the purpose herein specified.

No. 46,425.—C. B. ROGERS, assignor to C. B. ROGERS & CO., Norwich, Conn.—*Sawing Machine.*—February 14, 1865.—This invention consists in arranging the feed rollers in movable frames, and applying a screw rod to operate upon these frames in such a manner that the rollers can both be adjusted together in a plane parallel to that of the saw. In connection with the above are combined pivoted arms, with a sliding cross-head and adjusting screw. Circular saws, of different diameters, may be used by mounting the saw arbor upon a longitudinally adjustable frame in connection with an adjustable guide.

Claim.—First, so arranging the feed rollers C C in movable frames *a a*, and applying a screw rod to operate upon these frames, that the rollers can both be adjusted together in a plane parallel to that of the saw, the parts being constructed, arranged, and operated substantially as described.

Second, the combination of pivoted arms *d d*, sliding cross-head *b'*, and adjustable screw *o*, with feed rollers which are supported in adjustable frames *a a*, substantially as described.

Third, the spring *f* and the frames *a' a'* of the pressure rollers D D, in combination with the adjusting screw *e'* and slide *e*, substantially as and for the purposes described.

Fourth, providing for the use of circular saws of different diameters by mounting the saw arbor upon a longitudinally adjustable frame H, constructed, arranged, and operating substantially as described.

Fifth, the adjustable saw arbor G, in combination with feed rollers C D, all arranged substantially as and for the purposes described.

Sixth, adjustable guide F, or its equivalent, in combination with the adjustable saw arbor G, substantially as described.

No. 46,426.—GEORGE K. SNOW, assignor to himself and MARCH BROTHERS, PIERCE & CO., Watertown, Mass.—*Neck-tie Supporters.*—February 14, 1865.—In this invention a wire is so bent as to have a saddle at its centre to rest on the button that holds the two ends of the collar in front; two arms then pass upward and laterally between the folds of the collar, and thence to the centre, where the ends terminate in eyes or hooks, to which the bow or scar may be attached.

Claim.—The said bow or scarf supporter, as composed of the bow attachments *a a*, the button socket or saddle *b*, and the elastic arms *c c*, the whole being made of wire or its equivalent, substantially as specified.

No. 46,427.—JOHN S. LANDES, assignor to himself and HENRY G. HALBACH, Lancaster, Penn.—*Boot Crimping Machine.*—February 14, 1865.—This invention consists in the arrangement of the shin and instep pieces, held together by a leather hinge and connected to a base piece provided with two handled screws at the ends of the latter; the shin and instep piece being combined with sheet iron plates fastened on each side of the shin, and so attached as to be allowed to slide under the motion of the two former pieces.

Claim.—The construction and arrangement of the pieces B C, connected by a hinge *a b c* to the central projection *a* on the base piece A, with the two handled screws F G in A, acting on said pieces B C respectively.

Also, the pieces B C and their hinged attachment to A, in combination with their sheet iron plates D E and their attachments respectively, in manner shown, for operating upon the leather held by the clams L' L'' L''', by means of the handled screws F G, all arranged and operating substantially in the manner set forth for the purpose specified.

No. 46,428.—CHARLES P. WIGGINS assignor to CASE, MARSH & CO., Indianapolis, Ind.—*Sawing Machines.*—February 14, 1865.—This invention consists in applying an adjustable slide to the guide-bar in such manner that the saw can be made to have a rocking motion as well as a reciprocating motion.

Claim.—The adjustable slide E, when connected to guide-bar D, and constructed to operate substantially as described.

No. 46,429.—JOAB K. WOOSTER, Strykersville, N. Y., assignor to himself and ROBERT DUNBAR, Buffalo, N. Y.—*Water Wheel.*—February 14, 1865.—The object of this invention is to economize the use of water for exerting force on a water wheel when the supply is limited, and to obtain a greater comparative force from a given minimum supply than that attainable from the maximum amount. Its novelty consists in the arrangement of buckets with partitions, and the combination and arrangement of the shaft J, the step J', the solid shaft F, the hollow shaft F', and a supporting step.

Claim.—First, a water wheel bucket having partitions C for the purposes and substantially as described.

Second, the combination and arrangement of the shaft J, including the step J' with the solid shaft F and a hollow shaft F' for the purpose of locating and supporting the step J' above the water, substantially as herein described.

No. 46,430.—JOAB K. WOOSTER, Strykersville, N. Y., assignor to himself and ROBERT DUNBAR, Buffalo, N. Y.—*Governor for Water Wheel Gates.*—February 14, 1865.—This invention relates to a means for opening and closing the gates of water wheels, and graduating with facility the quantity of water suited to the work being done, from the maximum to the minimum amount of water and capacity of the wheel. Its novelty consists in a belt, of varying width, applied to three pulleys on one shaft, the two outside being made fast on the shaft, and the middle pulley loose on the shaft; which shaft, by means of a rack and pinion connected with the water wheel gate and a governor of the ordinary construction, is made to control the movement of the gate.

Claim.—A belt of varying width running over three pulleys located in close proximity to each other on one shaft, the middle pulley being loose on the shaft, and the two outside being made fast on the shaft; and which shaft is, by means of rack and pinion, or other suitable device, connected with a water wheel gate and a governor of ordinary construction, so that the governor will control the movements of the gate, to admit a greater or less quantity of water upon the wheel, substantially as described

No. 46,431.—John Von Bohm, Melbourne, Australia.—*Process for Improving the Color of Molasses.*—February 14, 1865.—This invention consists in first diluting the molasses with water, after which a saturated infusion of nut gall is added until the color is changed to a dark brown; sulphuric acid is added to the mixture until it assumes a pale straw color, after which it is neutralized by means of carbonate of lime or other alkali, after which it is filtered and evaporated to the required density.

Claim.—The employment of tannin, substantially as herein described, in the purification of molasses.

No. 46,432.—William Henry Buckland, London, England.—*Apparatus for Carburetting Air.*—February 14, 1865; patented in England, March 5, 1863.—This apparatus consists of a vessel divided into two compartments by a false bottom. The upper compartment is provided with vertical perforated partitions, which are covered with fibrous material. The fibrous material extends down through the apertures in the false bottom into the hydrocarbon liquid; the hydrocarbon liquid is supplied through the aperture into the upper compartment, and from thence it flows through the pipe into the compartment.

Claim.—The gas apparatus herein represented and described, consisting of the reservoir *a*, false bottom *b*, perforated partition *e e*, covered with fibrous material, inlet aperture *f*, and exit *g*, all constructed, arranged, and operating as specified.

No. 46,433.—Pierre Joyot, Jr., Paris, France.—*Looms for Weaving Double-faced Pile Fabrics.*—February 14, 1865.—The claim and engraving define this invention.

Claim.—In the manufacture of a double-faced fabric or tissue, presenting either a cut or non-cut pile velvet on part or on the entire of both surfaces of the fabric or tissue, the application, instead of the ordinary pile-wires of double-pronged forks, one prong or more of which serves for forming the upper, and the other prong for forming the lower pile, the said prongs or wires being either provided with a cutting edge or not, and the forks being moved automatically by the loom, substantially as set forth.

No. 46,434.—F. Watkins, London Works, Birmingham, England.—*Machine for Heading Bolts.*—February 14, 1865.—In this machine the die for upsetting the end of the blank, and which forms the head of the bolt, is attached to the lower end of a vertically-sliding plungerr which is operated by a cam upon a cross-shaft. The lower die is located in a horizontally-sliding frame, which, after the head has been formed, is drawn out from under the plunge, to enable the finished bolt to be removed and to insert a fresh blank. To facilitate the removal of the bolt a rod passes up into the die from below, its lower end resting upon a horizontal bar, pivoted at one end, the other free, and being connected by a stirrup to a cam upon the aforesaid cross-shaft. So soon as the die has been drawn out the bar is elevated by means of the stirrup and cam, and the bolt is thus pushed out of the die.

Claim.—First, the employment or use of a vertical slide or slides, carrying at their lower ends changeable dies, which are provided with cavities in their lower surfaces corresponding with the size and form of the heads required.

Second, the use of a movable carriage or carriages, containing changeable and adjustable heading tools, which are provided with holes or sockets corresponding with the body or shank of the bolt, arranged in combination with the hand levers, or other equivalent device, substantially in the manner herein specified, so that the operator working the machine may conveniently place the blank or remove the bolt, spike, or rivet, when completed.

Third, the arrangement of levers substantially such as herein shown and described, for the purpose of partly removing the articles from the heading tools after the same have been operated upon by the header.

Fourth, the application of India-rubber, or other suitable springs, substantially as described, for the purpose of furnishing a yielding bearing, necessary for the safe working of the machine.

Fifth, making the heading tools and dies of cast iron with chilled surfaces.

No. 46,435.—Hubley Albright, Lewisburg, Penn.—*Horse-rakes.*—February 21, 1865.—This invention consists in an arrangement of devices for controlling the motions of the rake-teeth, discharging their load, &c. It will be understood from the claim and drawing.

Claim.—First, the arrangement of the teeth bars H, and bent rod E, the latter being attached to the axle A, as shown, and in such a relative position with the rake-teeth I, to operate as and for the purpose set forth.

Second, the lever F, in combination with the bars H F L, and the springs O, all arranged as and for the purpose specified.

No. 46,436.—William Avens and Frederick Fradley, Brooklyn, N. Y.—*Rotary Engines.*—February 21, 1865.—This invention consists of a wheel provided with two sets of chambers, to each of which access is had by two channels situated on the opposite ends of the chambers, and tapering off in opposite directions, in combination with a cylinder fitting closely to the circumference of the wheel, and with valves which open and close the steam ports in such a manner that, by admitting steam to the chambers of the wheel, a rotary mo-

tion may be imparted to the same in either direction, and, by a simple movement of the valves, the motion of the engine can be reversed at any moment.

Claim.—The wheel A, with one or more sets of chambers, B, which are provided each with two channels, *d d'*, situated at opposite corners, in combination with ports *e e'*, valves J, and cylinder F, all constructed and operating substantially as and for the purpose set forth.

No. 46,437.—SILAS BARKER, Hartford, Conn.—*Bomb Lance for Killing Whales.*—February 21, 1865.—The harpoon or lance is provided with a charged explosive head, fitted into it by a cylindrical stem containing a fuze, which, by means of a percussion device, is ignited after the harpoon strikes the whale, and the said charged head is detached and driven further forward before exploding.

Claim.—First, the arrangement of the mode of separation of the lance-head C, and fuze tube F, from the shaft of the lance, substantially as described.

Second, the arrangement of the adjustable hollow exploding lance-head C, in the manner and for the purpose substantially as herein set forth and described.

No. 46,438.—CHARLES PETIT BENOIT, Detroit, Mich.—*Adjustable Tool-holder.*—February 21, 1865.—In this invention a bar inserted in the tool port has on its inner end another shorter bar, connected thereto by a knuckle-joint. This shorter bar has in its outer end a diagonal slot or mortise, extending from the bottom edge upwards and outwards, in which the cutting tool is adjusted and secured by means of a set screw. By this arrangement, without turning the post, the cutter can be set at any angle relatively to the surface to be cut which may be desired.

Claim.—First the adjustable holder B, swivelled in the end of the stock A, so as to adapt the tool for various kinds of work, substantially as set forth.

Second, in combination with a tool-holder, constructed and mounted as above specified, the washer E, having grooved or roughened surfaces, and employed in connection with the nut C' for retaining the tool-holder in position, as explained.

No. 46,439.—GEORGE J. BENTLEY, Michigan City, Ind.—*Machine for Riving Hoops.*—February 21, 1865.—The bar of wood to be rived is sawed out of a proper width for the hoop required, and the end checked by a gang of circular saws. The end is then placed between the guiding friction wheels and advanced to the groove of the wheel, where it is seized by the bite of the upper pressure disk, and passing along is deflected upwards by another wheel emerging from between the latter wheel and the upper disk in a riven condition.

Claim.—The combination of the grooved wheel D with the disks F and F', the latter being suspended in hanging bearings, substantially as set forth.

No. 46,440.—EDWIN L. BERGSTRESSER, Berrysburg, Penn.—*Churns.*—February 21, 1865.—This invention consists in the arrangement of two crank wheels attached to two levers on top of the churn, the levers extending into the churn and having perforated beaters on each end.

Claim.—The double-acting dashers, with the steam reservoir and pipe, arranged and combined as herein described.

No. 46,441.—PAUL BIRCHMEYER, Syracuse, N. Y.—*Brushes for Cannon.*—February 21, 1865.—In this invention a hollow head as usual is made to fit the rammer or sponge staff, and a spiral groove is turned on its outside from one end to the other; a mat of horse or horned-cattle hair is then laid around the stock and lashed down by wire wound upon it, over the grooves, embedding it in the same.

Claim.—As an article of manufacture an artillery sponge, constructed as described—that is to say, by laying a mat of horse or horned-cattle hair around a central hollow stock or head, and fastening it by a wrapping wire into the spiral groove, the semi-globular end being made by looping in a portion of the mat, as described.

No. 46,442.—JOHN BLANCHARD, Pawtucket, R. I.—*Weft-feeding Device for Hair-cloth Looms.*—February 21, 1865; antedated February 16, 1865.—In this invention the feeder, which is designed to select, seize, carry across, and deliver into the shed of the warp a single hair at a time, dispenses with the usual appliances and nippers; and instead thereof, the feeder, which has the usual reciprocating motion across the loom, is a sheath enclosing a slender finger fitted to slide therein a short distance longitudinally, there being just sufficient space between the finger and the mouth of the sheath to admit a single hair. The finger has a number of barbs, like the teeth of a file, on its protruding end, and is slidden in and out to seize and release a hair, by the action of the loom and a returning spring.

Claim.—The improved feeder for a hair-cloth loom described, constructed and operated substantially as herein specified.

No. 46,443.—GUISEPPE BOTTERO, Boston, Mass.—*Leather and Process of Manufacturing the same.*—February 21, 1865.—This invention consists in roasting sulphate of iron until it assumes a dark red color, after which it is thrown into water and allowed to remain

twenty-four hours; the liquid is then poured off from the sediment and used for tanning hides.

Claim.—The process above described, as well as the material or manufacture produced thereby.

No. 46,444.—PHILIP H. BRANSON, St. Louis, Mo.—*Street-lamp Posts.*—February 21, 1865.—This invention consists of a lamp post constructed in two parts, viz: a base which is set in the ground, and an upper portion which has a sleeve on its lower end which fits into the upper end of the base. By constructing lamp posts in this manner, when the upper part of the post is broken off it may be easily replaced.

Claim.—First, as a new manufacture, a lamp post constructed in two parts, substantially in the manner and for the purpose herein set forth.

Second, the employment of the chipping strips C‴, substantially as and for the purpose set forth.

No. 46,445.—MYRON E. BROWN, Buffalo, N. Y.—*Variable Exhaust Nozzles.*—February 21, 1865.—This invention consists in dividing the conical or contracted portion of the exhaust pipe into halves, and in hinging them to the main exhaust pipe, the axis of which is at right angles to the axis of the nozzles in such a manner that, as they are caused to recede from each other by means of the general cam provided for that purpose, the area of opening is increased and the force of the blast is reduced, and upon the movement of the cam in the opposite direction they are caused to approach each other, and the area is reduced and the blast increased in force. One of these movable portions is provided with a flange which passes within recesses formed in the other, so that when extended the steam is prevented from escaping through spaces which would otherwise be formed between them. A flange or projection is placed upon the base of the movable parts, which rises to a sufficient height to prevent the escape of steam from their bases as they are opened.

Claim.—First, making a conical nozzle in two parts or halves, the said halves being hinged at the base, and so constructed that they lap past each other, so that when expanded by being moved upon their hinges the lapping parts will prevent any break or opening between the halves, substantially as described and for the purposes set forth.

Second, the flange C′, projecting inwardly inside the nozzle, for the purpose of breaking joints between the seat and base of the nozzle, and thus, by carrying the flange above the joint, prevent steam from escaping at the bottom of the nozzle, substantially as described.

No. 46,446.—CHURCH BURTON, Union, Me.—*Tanning.*—February 21, 1865.—This invention consists in using the green boughs of spruce and fir in preparing a tanning liquor.

Claim.—The tanning of hides and skins with evergreen boughs, such as spruce and fir.

No. 46,447.—EZRA CALDERWOOD, Portland, Me.—*Revolving Hay Rakes.*—February 21, 1865.—This invention consists of a revolving rake, to be drawn either manually or by a horse, and a means is employed for holding the rake in working position, which will admit of being readily actuated to liberate the rake, so that it may revolve and discharge its load when necessary.

Claim.—The combination with the thill A′, of the box D, movable cap *c*′, and spring bolt G, the latter engaging with the notched or recessed wheel E, upon the rake head, all as herein described.

No. 46,448.—ELIZUR E. CLARKE, New Haven, Conn.—*Machine for Cutting Pasteboard.*—February 21, 1865.—The object of this invention is to cut and score the board at one operation; to accomplish which, the machine is provided with two cutter bars bearing revolving adjustable cutters, and the board to be cut and scored is fed automatically.

Claim.—First, the method herein described of cutting pasteboard, by combining with fixed cutters and revolving cylinder a mechanism for raising and lowering the said cylinder to and from the cutters at given intervals of space, to more or less or not at all indent the pasteboard or to produce a through cut at pleasure, substantially as set forth.

Second, combining in one machine two cutter bars, provided with adjustable or fixed cutters, with two cylinders geared so as to revolve with equal velocities, one of the said cylinders revolving in fixed bearings, while the other, actuated by suitable mechanism, is raised to or lowered from the cutters, as herein described.

Third, in combination with adjustable or fixed collars and revolving cutter cylinder, a cam cylinder or wheel revolving in unison with the cutter cylinder, and actuating it to more or less impinge against the cutters at given intervals of space, substantially as set forth.

Fourth, the combination with the cutters, cutter cylinder and cam wheel, a feed bar, actuated by the cam wheel, or any part moving in unison therewith, in such manner as to feed the sheet to the cutters automatically and at proper intervals of time during the revolution of the cam wheel to receive the through and score cut between given points, substantially as set forth.

Fifth, the combination of the grooved and flanged disk, with detachable cams and clamps, and screw bolts to fasten the cams to the periphery of the wheels, substantially as set forth.

Sixth, in combination with a machine for cutting pasteboard, a sliding and adjustable platform, a table for receiving the scored and cut sheets, the arrangement being such that the said table may be slid under the main cylinder, so as to admit of the operator approaching the cutters to adjust them, substantially as set forth.

Seventh, the combination of the cutter-holder and stock, fitted together by means of a vertical tongue and groove, with one or more horizontal guide tongues on the back of the stock, and fitting and sliding in a corresponding groove or grooves in the cutter bar, or the projecting studs or the cutter stock lapping over and under the cutter bar, together with a binding bolt passing through the central guide tongue, substantially as set forth.

Eighth, the forked arm and groove screw nut, working in combination with the inverted T-groove in the side of the cutter bars, with the binding screw bolts and nuts, substantially as described, and for the purpose specified.

No. 46,449.—ALFRED P. CORVELL, Janesville, Wis.—*Medical Compound.*—February 21, 1865; antedated February 16, 1865.—This invention consists of a mixture of nitric acid, citric acid, sweet spirits of nitre, spirits of turpentine bi-tartrate of potassium diluted with distilled water.

Claim.—The use of a compound made of the ingredients above specified, mixed together in about the proportion and substantially in the manner set forth.

No. 46,450.—JAMES A. COWLES, Chicago, Ill.—*Horse Hay Forks.*—February 21, 1865.—This invention consists in the construction and combination of several parts identified by the claim, from which and the engraving it will be readily understood.

Claim.—First, the combination of the key or right-angled lever *f* with the bail pivoted at the eyes *p p*, when said bail is located in the described situation with the handle *c*, and head *a a*, as and for the purpose herein set forth.

Second, the combination of the head *a*, handle *c*, key or right-angled lever *f*, catch *o o*, and bail, in the manner and for the purpose described.

No. 46,451.—ELLIOT H. CRANE, Jonesville, Mich.—*Door Fastener.*—February 21, 1865.—In this invention, flat spurs are formed transversely on one end of a metallic plate, and at right angles thereto, while at the other, in a longitudinal slot extending to the middle of said plate, is hinged a segmental latch; this latch, by means of a spring, is projected through the slot to the side of the plate opposite the spurs, and when the latter are inserted in the jamb in their proper position, the door by closing impinges on said latch, and forces it to the opposite side until the door passes, when the spring again forces it to its normal position, and the door is secured against opening from the outside.

Claim.—The combination of the segmental latch piece B, vibrating on a pivot within a slot of the plate A, and actuated by the spring C, by which the plate being fastened in position, the closing door forcing back the latch piece, which is forced to return when the edge of the door has passed it.

No. 46,452.—EPHRAIM CULVER, Shelburne, Mass.—*Clothes Dryer.*—February 21, 1865.—In a hub on an upright shaft are pivoted four or more arms so as to move in vertical planes. In each arm is a longitudinal slot. Through each slot just passes one end of a brace, the other end of which is pivoted to the hub above the point at which the arms are pivoted. By means of a set screw the end of each brace may be adjusted at any part of the slot in its corresponding arm, and thus the arm may be raised or lowered at will.

Claim.—The combination of the slotted and movable arm *c*, the movable brace *d*, and hub *i*, and the screw and nut *e*, substantially as and for the purpose described.

No. 46,453.—EBENEZER F. DECKER, Southport, Maine.—*Fishing-line Sinkers.*—February 21, 1865.—In this invention the sinker is suspended between portions of the line, with ring and swivel connections; two rigid arms, connected together, being firmly imbedded in the middle of the sinker.

Claim.—The combination of the guard ring, the line, the swivel, the sinker, and the arms D B, the whole being arranged substantially as specified.

No. 46,454.—JOHN DEERE, Moline, Ill.—*Ploughs.*—February 21, 1865.—This invention relates to devices for giving strength and stability to the parts, consisting of lugs and ears upon the land side, in combination with other parts, by means of which the plough can be more readily put together, and, when once put together, remains firm and substantial.

Claim.—First, the combination of the land side A with the solid lugs 3 3 3 and the perforated ear 5, substantially as and for the purpose set forth.

Second, the lug 3, cast on the land side, substantially as and for the purpose set forth.

Third, the guide and fastening ear 5, in combination with the movable standard, substantially as and for the purpose set forth.

Fourth, the combination of the land side standard and mouldboard, by means and in the manner substantially as described.

Fifth, the construction of the shear C, with the perforated ear *g*, substantially as and for the purpose set forth.

No. 46,455.—PORTER DODGE, Perkinsville, Vt.—*Soapstone Stove.*—February 21, 1865.—This invention consists of an iron frame, into which soapstone plates are fitted; plates of soapstone are also arranged in iron frames inside of the fire-chamber, so as to prevent too great radiation of heat on the external plates. Ornamental perforated metallic plates, fitted at edges into the frame, cover the sides and ends of the stove. Between the two plates of stone on top—one immediately over the fire-chamber and the other fitted to the rim on top of the perforated plates—is an air space; there is a door of soapstone for the fire-chamber and a corresponding one in the covering.

Claim.—First, constructing and arranging the corner pieces C of the iron skeleton frame of a stove, so that they hold the soapstone slabs and the outer open iron work, substantially in the manner described.

Second, in combination with the corner pieces C, secured to the bottom of the stove, the top piece D, for the purpose of holding both the corner pieces and the top slab E of the stove, substantially in the manner described.

Third, the combination and arrangement of the inner linings L with the outer slabs B, when constructed and applied substantially as and for the purpose described.

Fourth, the combination and arrangement of the iron skeleton frame with the soapstone sides B and top E, inner linings L, outer iron work F, and stovepipe attachment, substantially as and for the purposes set forth.

No. 46,456.—ARAD DUNCAN and JOHN M. ZIEGLER, Aurora, Ill.—*Car-seat Lock.*—February 21, 1865.—This invention consists of a cylindrical case, which is to be let into the wood, having arranged within it a round bolt bevelled at its outer end; a spiral spring for projecting the bolt outward, and a cam or circular inclined plane, upon or against the surface of which a pin protruding from the bolt is made to slide and thus retract the bolt as the latter is turned around by the key.

Claim.—The combination of the bolt E, pin *d*, cam D, spring *a*, and barrel A, when constructed and arranged as herein specified, so that when in its operative position the said bolt will project from its case, but be free to spring within the same in closing, and when reversed will be held within its case by the action of the cam and pin.

No. 46,457.—JOHN R. ELLIS, company F, 22d regiment Wisconsin volunteers.—*Rotary Engines.*—February 21, 1865.—The novelty of this invention consists in two revolving piston wheels connected together by cog wheels, and placed eccentrically in two adjoining cylinders, in combination with a valve which occupies the channel leading from one cylinder to the other, and to which motion is imparted by eccentrics or other means mounted on the shaft of the piston wheels in such a manner that said piston wheels and intervening valve are alternately acted upon by the steam passing in through the channel connecting the two cylinders, and that, by the action of the valve and piston wheels, one cylinder takes steam while the other exhausts, and *vice versa*.

Claim.—The revolving piston wheels D D′, which are placed eccentrically on shafts C C′ and geared together by eccentric wheels F F′, to operate in combination with the adjoining cylinders B B′ and intervening valve E, substantially in the manner and for the purpose herein shown and described.

No. 46,458.—MOSES R. FLANDERS, Ilion, N. Y.—*Scythe Fastening.*—February 21, 1865.—A band surrounds the end of the snath, flattened at one side; this band is provided with a transverse flange at its lower end, so that the ring which is put on over the band from the upper side may not slip off it. The heel of the scythe passes between the band and the ring, and is secured by the latter.

Claim —The scythe fastening, consisting of the heel guard A, heel band B, heel plate E, and heel ring C, when constructed and combined substantially as set forth.

No. 46,459.—VALENTINE FOGERTY, Boston, Mass.—*Magazine Fire-arms.*—February 21, 1865.—This invention relates to the magazine of repeating or self-loading fire-arms, and consists of a tube, with transverse recesses or rack grooves, separated by the length of the cartridges, which are thus supported therein by flanges. A concave rack-bar, similarly grooved, has a longitudinal play within said tube and between it and the series of cartridges sufficient to draw the cartridges forward one length at each reciprocating movement of the said concave rack-bar, and thus the cartridges are successively presented within the chamber of the arm.

Claim.—First, the reciprocating grooved rack D, suspended by ears *d* from a bar *b* and actuated by a rod C, the said rack operating in combination with the grooved magazine A *g*, to forward the cartridges *a a*, as herein described.

Second, in combination with the above, the elongated holes *b* in the ears *d* to permit the vertical or lateral motion of the rack, as and for the object specified.

No. 46,460.—JOSEPH FREY, Battle Creek, Mich.—*Sawing Machine.*—February 21, 1865.—The object of this invention is to saw logs of wood into bolts by a drag saw, and it consists in an arrangement of devices by means of which the saw is operated to saw off a cut, when it is raised up out of the way and the log fed along the distance of another length of bolt.

Claim.—The arrangement in a sawing machine of the saw L, guide L', saw frame L2, spring G, levers E L4 J1, pitman *h*, crank wheel H, worm A, rod *f*, pinion B, tumbling shafts C C', and roller D, the whole constructed and operating substantially as herein set forth.

No. 46,461.—ELI P. GARDINER, New York, N. Y.—*Machinery for Breaking Quartz, &c.*—February 21, 1865.—This invention consists in the peculiar arrangement and construction of the parts, and will be readily understood by the claim, in connection with illustration.

Claim.—First, the combination and arrangement of the arms D D', hung upon centres at unequal distances from the faces, with the operating shaft G and cranks and shackle bars H H, the whole operating together in the manner and for the purposes described.

Second, the combining and arranging and operating the sieves and trough with the reciprocating arms, in the manner and for the purposes specified.

No. 46,462.—PERRY G. GARDINER, New York, N. Y.—*Quartz Crusher.*—February 21, 1865.—This invention consists in an oscillating basin, the lower end of whose shaft is connected with and rotates in the hub of the machine. Upon the axle or shaft is adjusted the ring or bush, which is fitted with slots to receive and hold firmly the iron bands or straps; the object of these bands or straps is to support and strengthen the basin; within the basin is placed the ball which is to pulverize the ore.

Claim —First, the combination and arrangement of the vibrating bush blocks G and H and the pillar blocks D, operating in the manner and for the purposes described.

Second, the combination of the bush blocks, double-joint and pillar blocks, with the hollow shaft and basin, acting in the manner and for the purposes described.

Third, the manner of strengthening and supporting the sides of the basin by means of the bands or straps N, having their bearings in the ring or bush block M, whereby support is given to the basin, so that it can be constructed with less weight of metal than would otherwise be required.

Fourth, the combination of the vertical shaft I, the forked arm K, and the inclined shaft or axle L with the basin, whereby the progressive oscillatory, but not rotating, motion is given to the basin by the rotation of the vertical shaft I, as described.

Fifth, the combining and arranging of a rake P with the inclined shaft L and the basin F, so as always to be in front of the ball and to oscillate with the basin and shaft, for the purposes and in the manner described.

No. 46,463.—ANDREW J. GOVE, San Francisco, Cal.—*Dredging Machine for Harbors and Rivers.*—February 21, 1865.—This invention consists of a scow, furnished with a scoop, so arranged as to be used as a dredge, and also as a vehicle for conveying material to a proper place for dumping.

Claim.—The scoop or dredger D, in combination with the scow C, or other convenient vessel, the spars or braces S S', the various lanyards and guys, and the compensating weights W W, substantially as described, and for the uses and purposes as herein before set forth.

No. 46,464.—WM. H. GRANT, Winchendon, Mass.—*Method of Uniting Rubber Rolls to Shafts.*—February 21, 1865.—This invention consists in melting the rubber in the interior of the roll by drawing it over a heated instrument which surrounds that portion of the shaft on which the roll is to be laid, which instrument, on being withdrawn, leaves the roll in the required position.

Claim.—The method of uniting rubber rolls to shafts substantially as set forth.

No. 46,465.—PHILIP R. GROSS, Manheim Centre, N. Y.—*Car Coupling.*—February 21, 1865.—The object of this invention is to obtain a coupling of the class called "automatic," which will operate with certainty as regards the coupling or connecting of the two draw-heads, and which will admit of being readily uncoupled when required, and also not coupling when necessary, as in case of backing cars when it it is not desired to connect them.

Claim.- The frames C, fitted on pivots at the front of the draw.bars A, and provided each with a hook E attached to an arbor *c*, and also provided with a vertical rod *d* in connection with the pawls H attached to the pivoted frames I, all arranged in connection with springs, to operate in the manner substantially as and for the purpose herein set forth.

No. 46,466.—STUART GWYNN, New York, N. Y.—*Impregnating Fibrous and Porous Material.*—February 21, 1865.—Fibrous and porous substances are impregnated with a heated composition of paraffine and rubber, gutta percha, or other gum, combined in proper proportions, for the purpose of rendering them water-proof, and not liable to injury from the moisture, dryness, heat or cold of the atmosphere, without at the same time rendering them impervious to air.

Claim.—Impregnating cloth, paper, or other fibrous or porous substances with the composition above described, for the purposes set forth.

No. 46,467.—James Harper, Hillsborough, Iowa.—*Beehive.*—February 21, 1865.—The comb-bearer is constructed of twelve frames, each of which is in the form of an isosceles triangle, or nearly so. These frames are set close together at their tops, while they are blocked apart to the distance of half an inch at their bottoms. The comb-bearer is closed at its ends with glass and at the bottom by a perforated hinged board.

Claim.—The arrangement of the comb-bearers A, stand S, lighting board B, and house E F, when constructed substantially as described and for the purposes set forth.

No. 46,468.—Horace Harris, Newark, N. J.—*Harness Snap.*—February 21, 1865; antedated February 12, 1865.—A hook, the point of which is bent round toward its stock as a sickle toward its handle; has a projection similar to and about opposite its point. A spring, fastened at one end to the stock, presses against both the point and the projection so as to completely close the interval.

Claim.—The extension of the spring A, in combination with the knob C and the hook B, for the purposes herein set forth.

No. 46,469.—J. O. Harris, Ottawa, Illinois.—*Railroad Ticket-holder.*—February 21, 1865.—In this invention a plate is fastened to any part of the passenger's dress, and two hooks, one at the bottom and another in one side of the plate, are made to hold the ticket.

Claim.—The combination of the herein described plate, the socket or clasp *b b*, and the spring or clasp *b′ b′*, arranged and operating substantially as and for the purposes herein shown and set forth.

No. 46,470.—Wm. Cleveland Hicks, New York, N. Y.—*Steam Engine.*—February 21, 1865.—This invention consists in the combination and arrangement of the following devices: Four cylinders are placed in opposite pairs in one and the same plane, and cast together, with a disk containing channels or steam-ways, through which it is admitted to and discharged from the cylinders. Through the outer ends of each cylinder pistons are introduced, which are of peculiar construction, in consequence of which they perform the functions of pistons and valves, and open and close the channels which admit the steam to the next in the series to the one in which the piston is located. From the inner ends of these pistons a connecting rod extends to a common crank, located centrally between the cylinders, which transmits the power to the machinery to be driven. The pistons are single-acting, and only receive the steam upon their outer ends.

Claim.—The combination and arrangement of steam machinery, operating substantially in the manner herein set forth.

No. 46,471.—James Ives, Mount Carmel, Conn.—*Lamp.*—February 21, 1865.—This invention consists in attaching the ends of two chains to devices supporting the deflector, chimney, and globe, and the other ends to the oil reservoir, so that, by suspending the lamp by passing said chains over pulleys, the reservoir, by the same act, may sink and the other parts rise, so as to expose the flame, trim the lamp, &c.

Claim.—First, a combined globe and chimney base or seat, substantially as and for the purpose set forth.

Second, in suspending the lamp and a globe and chimney that the movements of the lamp downward will cause an upward movement of both the chimney and the globe, substantially as and for the purposes set forth.

Third, the rods G G′ passing through the base D substantially as described.

Fourth, the combination of the rods G G′ and I I′ with the stay guard plate H, base D, lamp A, and chains J J′, substantially in and for the purpose set forth.

No. 46,472.—Henry F. Jenks, Providence, R. I.—*Window Sash Supporter.*—February 21, 1865.—A rectangular frame is let into the stile of the sash. Behind this frame a mortise is cut in the sash, in which is a spring which presses continually against the window frame, and thus holds the sash wherever it may be placed. The spring is arranged to act with greater or less force against the frame, according as the sash is heavy or light. The spring is withdrawn from contact with the window frame, when it is desired to raise or lower the sash, by means of a finger piece pivoted to the aforesaid frame in the sash.

Claim.—The arrangement of the spring D, the frame C, and the hooked finger piece E, constructed and operating substantially as described.

No. 46,473.—James Jennings, New York, N. Y.—*Apparatus for the Manufacture of Illuminating Gas.*—February 21, 1865.—This apparatus consists of two retorts for superheating steam; also, of three retorts to contain carbon, which latter are connected with steam retorts by means of pipes, and a pipe connecting the carbon retorts with a decomposing retort. In operation, steam enters the first named retorts, which are filled with pieces of porcelain, brick, &c., and also with scrap iron, when it is heated to incandescence and decomposed. The resulting gases then pass into the carbon retorts, when they are charged with carbon, and finally treated in the decomposing retort.

Claim.—The bench, constructed substantially as described for the purpose specified.

No. 46,474.—Daniel Kaufman, Boiling Springs, Penn.—*Combined Threshing Machine and Straw Cutter.*—February 21, 1865.—In this invention the cylinder and concave are both armed with beaters that have one cutting edge. When used as a thresher the back or blunt edges perform the work. By reversing the cylinder and concave the cutting edges act in concert to cut straw or hay for feed, &c.

Claim.—The combination of the toothed cylinder C and toothed concave D, arranged so as to be capable of being reversed in position, and provided with teeth bevelled or sharpened at one side, and broad and blunt at the opposite side, to form a combined fodder cutter and threshing machine, substantially as set forth.

No. 46,475.—Orin Kenison and Andrew J. McClary, Lawrence, Mass.—*Friction Mechanism for the Warp Beam of Looms.*—February 21, 1865.—In this invention the lever is prevented from vibrating as usual, and the irregularities of friction of the strap resulting from such vibration, and the consequent improper delivery of the warp. are avoided.

Claim.—The combination of the stationary bracket M, the screw N, and hook O, or their mechanical equivalent or equivalents, with the lever I and the friction strap F, when the latter are applied to the loom frame and the warp beam, substantially as specified.

No. 46,476.—Alexander G. Knapp, New York, N. Y.—*Apparatus for Stirring and Cooling Lard.*—February 21, 1865.—This apparatus consists of a tank for containing the lard, together with stirrers made of coiled metal tube. These stirrers are made hollow for the pur pose of having a stream of water from a tank flow through them so as to cool the lard while it is stirred. The stirrers are vibrated by means of any suitable device.

Claim.—The employment or use, for the purpose of stirring and cooling lard, of the serpentine or spiral dashers C C and D, constructed substantially in the manner herein shown and described.

No. 46,477.—Benjamin I. Lane, South Framingham, Mass.—*Apparatus for Inhaling Pure Air.*—February 21, 1865.—This invention consists in an elastic air-tight reservoir worn upon the person, and which, by means of a bellows-like motion that can be given the reservoir by the two handles, one before and the other behind, can be filled with air under pressure. Attached to this reservoir, by means of a pipe and valve, is a mask fitting tightly over the face, so that when the wearer enters an unrespirable atmosphere he can obtain air from the reservoir.

Claim.—First, the construction of the reservoir A with a valve *a* and hand straps *b*, substantially in the manner and for the purpose described.

Second, the combination of adjustable elastic straps with the air reservoir A, valve *a*, substantially in the manner and for the purpose described, whether the straps be the means of attachment to the body or other means for this purpose be employed.

Third, the combination of the mask C, furnished with the three contrivances B *g h*, or their equivalents, with the cock *p* and reservoir A furnished with the valve *a*, all substantially in the manner and for the purpose described.

Fourth, the device *h*, for allowing the wearer of the apparatus to inhale fresh external air when it is safe to do so, in combination with an air reservoir, which has its air under control of a cock *p*, substantially as and for the purposes set forth.

Fifth, the use of one or more elastic straps *c c*, applied to the flexible reservoir A, for attaching the latter to the body, and also for keeping up the supply of air to the respiratory organs, substantially as described.

No. 46,478.—Isaac S. Lauback, New York, N. Y.—*Metal Drilling Machine.*—February 21, 1865.—In the arm of the machine is a joint, by means of which the drill spindle can be set at any angle with the supporting column. The driving head is connected with the spindle head by means of an adjustable rod fitted with one or more universal joints in such manner that the drills can be moved about the driving head from place to place and put in a great variety of positions without materially interfering with the application of power thereto.

Claim.—Combining and uniting the two adjustable brackets Q and W by means of the adjustable connecting rod T, fitted with one or more universal joints, the one of said brackets to be combined with the driving head and the other with the spindle head of the machine, substantially in the manner described for the purposes specified.

No. 46,479.—John Philip Lebzetter, Lancaster, Penn.—*Wood Bending Machine.*—February 21, 1865.—This invention consists of a drum of a semicircular form properly secured to a frame. On the top and bottom of this drum, and on each side of the same, at a point about two-thirds of the distance back from the front, there is bolted a plate, near the end of which is a hole to receive a pivot that is attached to the top and bottom of two frames or winged levers, one of these levers being on each side of the drum, and attached to these winged levers is a vertical shaft, with an adjustable eccentric lever, that revolves and slides longitudinally on said shaft. Bolted centrally to the two front upright posts are two wooden springs projecting on each side of the drum; on the ends of these springs is a head with a tapered notch cut in the same to receive and hold fast the winged levers. To the front of the drum, and on each side of the same, is a rod fastened to the top and bottom of the same, passing perpendicularly through the centre partition of the drum.

Claim.—The winged levers E E, held by pivots or hinges on the drum, in combination with the spring or springs H, or their equivalent, for retaining them.

Also, the eccentric lever L, on its vertical shaft F, for shifting it up and down, in combination with the slotted hook *k*, wedge P, and rod or shaft R, arranged and operating substantially in the manner and for the purpose specified.

No. 46,480.—JAMES P. LONG, Osage, Iowa.—*Combined Seeder, Cultivator, and Roller.*—February 21, 1865.—The novelty of this invention consists in a combination of old devices in a peculiar manner so as to form a practically working combined machine.

Claim.—The combination of the seed cylinder E, adjustable frame F, tubes L, and distributers L′, cultivator teeth M, and roller B. the several parts being arranged and operating as and for the purpose specified.

No. 46,481.—W. C. MCGILL, Cincinnati, Ohio.—*Sash Fastener.*—February 21, 1865.—This invention consists of two levers let into the stile of the sash, hung to the same pivot, at right angles to each other, the long arms of one extending upwards and outwards against the frame at an angle of about 45 degrees, the other downwards at the same angle; their ends being chisel-shaped, and operating as cams against the frame, being held, the upper one by its own weight, the other by a weight attached to its shorter end. The movements of both are moreover controlled by a crank, the handle of which projects inside the stile of the sash.

Claim.—The arrangement of the pair of gravitating latchers E *e e′* and F *f*, and of the operating crank H G, the whole being formed, combined, and operating substantially as set forth.

No. 46,482.—RICHARD MONTGOMERY, New York, N. Y.—*Railroad.*—February 21, 1865.—The object of this invention is to furnish an aerial railroad particularly adapted to the streets of cities, but applicable also wherever else such a structure would be found advantageous. It consists in the construction of such railroad of corrugated beam iron, its several parts properly secured together; also in the use of a condensing or dummy engine attached to each car for propulsion, the wheels of the car being peculiarly adapted to the form of the rail.

Claim.—First, the use of corrugated iron beams in the construction of aerial railroads, substantially as set forth.

Second, the use of flat beams or bars of iron for connecting the ends of the rails together, and also for connecting and fastening the columns of support to the cross-ties, in the manner and for the purpose set forth.

Third, the use of corrugated iron rails, in combination with corrugated iron cross-ties and corrugated iron columns of support, in the construction of aerial railroads.

No. 46,483.—JAMES MORRISON, JR., Troy, N. Y.—*Coal Stove.*—February 21, 1865.—The fire grate is so constructed as to admit the removal of ashes, &c., without dumping, so that the fire is not prevented from burning freely during the operation. A cast-iron or fire-brick ring, with an air chamber perforated with numerous small apertures, is located so as to admit fresh air to the fire at a point about half way between the burning surface of the coal and the top of the fire grate.

Claim.—First, the employment of a vertical grate and frame I, with the downward recess E and horizontal grate *o* therein, in combination with the dumping and vibrating grate F, in the manner and for the purposes substantially as herein set forth.

Second, the combination with the stove a grate so constructed and arranged that the clinkers or like draught-obstructing material may be removed from any point or place at or just above its surface without dumping said grate, in the manner substantially as herein described and set forth.

Third, the special arrangement and combination of the iron ring G′ containing the air chamber G, and communicating with the fire at the sides of the fire chamber by means of numerous small apertures, with the tiers of fire-brick K and K′ surrounding the fire chamber above and below the said iron ring, in the manner substantially as herein set forth.

No. 46,484.—A. W. MOORE, Stafford, Conn.—*Jack for Pegging Boots, &c.*—February 21, 1865; antedated February 12, 1865.—This invention consists in the employment of one or more cams, in combination with a holder secured by means of an oscillating collar and a socket piece, which is secured and turns upon a post or standard.

Claim.—The employment of one or more cams F, in combination with the holder B and the socket plate A, arranged and operating substantially as and for the purpose described.

No. 46,485.—GEORGE M. MOWBRAY, Titusville, Penn.—*Ejector for Oil Wells.*—February 21, 1865.—This invention relates to the arrangement and combination of parts, which consist of a pipe through which air is forced down into a well, and a surface at the bottom of such pipe to resist the air and give it an upward motion, together with a plurality of pipes and passages, for the purpose of dividing, distributing, and conducting the air upward, so that it shall act upon the substance to be raised in finely comminuted currents.

Claim.—First, in ejectors for elevating liquids and other substances from wells, the com-

bination and arrangement of the following specified parts: first, a pipe through which to force air down into a well; second, a surface at the bottom of such pipe to resist the air so forced down, and give it an upward motion; and thirdly, the combination and arrangement of the plurality of pipes and passages, whereby to divide and distribute and conduct the air upwards, so that it shall act upon the oil or other liquids, and obstructing substances in its ascent, substantially as described.

Second, the combination and arrangement of the above-mentioned three parts, with an enclosing pipe into which they are to be placed, and between the inner surface of which and the outer surface of the pipe through which air is to be forced down, the liquid to be elevated is to ascend.

Third, a bulb or inverted cup or nozzle B, of any suitable form, screwed or otherwise attached to or formed upon the blast pipe, and provided on its upper surface with a plurality of apertures to deliver the air in attenuated form, substantially as set forth.

Fourth, in combination with the aforesaid pipe closed at bottom, and bulb B, with a plurality of apertures, the cup C, adjustable in the relation to the said bulb, substantially as and for the purposes set forth.

Fifth, in combination with the blast pipe A, the cup or bulb B, having upon its upper surface a plurality of perforations, slits, or tubes, surrounding the said blast pipes, substantially as and for the purposes set forth herein.

No. 46,486.—W. Needham and J. Nelson, Rockford, Ill.—*Harvester.*—February 21, 1865.—This invention relates to the manner of constructing and arranging the parts of the main frame when tubular iron is employed in the construction thereof; to the employment of clamps used in holding the parts of said tubular frame together, and of the gear frame combined therewith; also, to the devices employed for adjusting the seat, holding the reins, &c.

Claim.—First, the construction and arrangement of a tubular frame, substantially as and for the purpose set forth.

Second, the sockets or clamps as shown in Figs. 4, 5, 6, and 9, in combination with the tubular frame, for the purposes specified.

Third, the gear frame K′, with the clamp K, when constructed and combined with the tubular frame, as described.

Fourth, the wedge washer *k*, with serrated or notched faces, in combination with the notched face *l′* of the standard, and the notched face *j* in the clamp piece *b′*, as and for the purpose set forth.

Fifth, the wedge washer *r*, in combination with the spring seat R and the standard R′, in the manner and for the purpose set forth.

Sixth, the clamp levers H′ H′ and clamps *h″ h″*, in combination with the stirrup *h*, for the purpose specified.

Seventh, the levers M, spring catch *g*, rack N, pulleys *m n*, in combination with the rope or chain *l* and adjustable standard P, for the purpose set forth.

Eighth, in combination with the guard bar E, provided with the wood centre piece F attaching the guards, as and for the purpose set forth.

Ninth, the combination of the adjustable dividing runner J, the socket F′, and sleeve I, when constructed and operating conjointly, as and for the purpose set forth.

No. 46,487.—John Neil, Clinton, Mass.—*Shirt Bosom.*—February 21, 1865.—This invention consists of the bosom material being woven in patterns, with the ornamental band adjusted to fall in the centre, and a facing part of a peculiar color or shade parallel thereto, the latter to be divided and turned under.

Claim.—As a new article of manufacture, the woollen shirt bosom herein before described, woven in single pattern, cut in the centre, and jointed at the edges, all as specified.

No. 46,488.—Frederick Nishiwitz, Brooklyn, N. Y.—*Harvester.*—February 21, 1865.—This invention relates to the mechanism for operating the cutters; to the means for raising the cutting apparatus; to the attachment of said cutting apparatus to the main frame; and to the arrangement of a supplementary in a shoe for sustaining a portion of the weight of said cutting apparatus and protecting the connecting rod.

Claim.—First, the combination of the stationary toothed plate D, pinions F F attached to the ends of an arm E firmly keyed on the axle C, with the pinion G on the collar H placed loosely on the axle, and the lever wheel I also placed loosely on the axle and connected with the collar H, all arranged to operate substantially as and for the purpose set forth.

Second, the lever M′ applied to the main frame A, and in relation with the draught pole N*, as shown, and connected to the finger bar O by a chain *f*, all arranged to operate substantially as and for the purpose set forth.

Third, connecting the finger bar O with the main frame A by means of a joint composed of the semicircular recesses *g g* in the pendants P P and the semicircular projections *h h* on the sides of the finger bar O, substantially as described.

Fourth, the shoe S, arranged and applied to the main frame A relatively with the pitman N and finger bar O, to operate substantially as and for the purpose specified.

No. 46,489.—Oliver B. North, New Haven, Conn.—*Harness Saddle-tree.*—February 21, 1865.—This invention consists in forming jockeys in connection with that part of the bow to which the crupper loop is attached all in one piece; also, in the casing of a stud upon the under side of the upper portion of the seat, and in uniting the check hook to the bow of the jockeys, by inserting the shank of the hook between the bow of the jockeys and the lower frame, and using a screw and pin to firmly secure it.

Claim.—First, a metallic saddle-tree for harness, composed of the jockeys, cantel, and seat, cast in separate pieces, and united together, substantially in the manner and for the purpose described.

Second, casting a stud upon the under side of the seat, for the purpose of uniting said seat to the cantel without passing rivets or screws through, which interfere with and mar the plating or japanning, as herein described.

Third, uniting the check hook to the tree by passing the shank of the hook under the bow of the jockeys and above the frame, and uniting it by the stud or pin *f* and the screw and nut *g b*, or their equivalent devices, substantially as herein described and represented.

No. 46,490.—Thomas G. Orwig, New York, N. Y.—*Projectile.*—February 21, 1865.—The projectile screws into a cylindrical ring cup, which has an extension rearward, and to which is secured the cartridge bag. The charge is introduced through holes in the base of the cup; and to the base is secured a central spindle, on which are fitted several telescopic tubes, the outer one of which has radial wings. When the charge is fired the tubes extend rearward and form a guiding tail.

Claim.—First, the telescopic tubes *g g*, adapted to slide and rotate one within another, in the described combination with the ball A, stem *f*, and wings *h h*, all arranged and operating in the manner and for the purposes set forth.

Second, the combination of the perforated cap B with the winged telescope stem E, soft metal ring C, projectile A, and cartridge bag D, constructed and operating substantially as and for the purpose described.

No. 46,491.—Samuel Patrick, Galesburg, Ill.—*Heating Carving Table.*—February 21, 1865.—In this invention a carving table is provided with a series of pans of varying depths, communicating with each other and with a boiler, whence, by means of pipes, a supply of hot water is afforded. Vessels for holding food fit into these pans. The device is designed for use in hotels, &c.

Claim.—First, a carving table which is provided with a series of pans of varying depths, that communicate with each other and also with a boiler, substantially as described.

Second, distributing water of different temperatures through a series of pans by producing a circulation, substantially as herein described.

No. 46,492.—C. C. Peck, Black Hawk, Colorado Territory.—*Amalgamator.*—February 21, 1865.—This invention consists of a series of pans, arranged upon a swinging platform in such a position that each pan empties into the one next below it in the series, and then giving to the platform both a vertical and longitudinal movement, by means of a cam and crank, which are attached at one side to the frame, and gives a three-fold movement, viz., a longitudinal, a vertical, a partially rotary motion, all operating conjointly and simultaneously.

Claim.—First, the pan B, constructed in the form and style shown and described.

Second, a series of pans, arranged to operate in the manner and for the purpose set forth.

Third, the spider *m*, provided with the bearing *n* and arm *h*, substantially as shown and described.

Fourth, the suspended platform A, arranged to vibrate vertically and longitudinally, as and for the purpose set forth.

Fifth, so arranging an amalgamator pan as to give to it the three-fold motion, substantially as and for the purpose set forth.

No. 46,493.—Thomas W. Pierce, Richfield, Minn.—*Stock Feeder.*—February 21, 1865.—Through a chest containing feed runs, longitudinally, a shaft, with a series of cavities upon its surface, which become charged with feed and deposit it, as the shaft rotates, in a trough below.

Claim.—First, the shaft F, mounted within the chest A, in the manner described, and provided with cups which, by the rotation of the shaft, are filled and discharged, substantially as and for the purpose set forth.

Second, the spring L and knob M, in combination with the notch or recess N, for holding the shaft F against rotation when the feeding operation is suspended.

No. 46,494.—Mary Pike, Cornish, N. H.—*Eye Water.*—February 21, 1865.—This invention consists in a composition of sulphate of zinc and chloride of sodium dissolved in water, to which winter green or other essence may be added.

Claim.—An eye water or lotion, composed of the sulphate of zinc and chloride of sodium mixed together and dissolved in water, about in the proportion herein set forth.

No. 46,495.—Wm. L. Potter, Clifton Park, N. Y.—*Roofing Composition.*—February 21, 1865.—This invention consists of a composition of ground slate rock, coal tar, and oil paint.

Claim.—The use of pulverized slate rock for roofing, covering the sides of buildings, boat decks, &c., as set forth and described.

No. 46,496.—W. B. Purdy, Huntingdon, Penn.—*Universal Timepiece.*—February 21, 1865.—In this invention a number of concentric circles are marked upon the dial of a watch, each of which is marked with the name of a place. The several hands correspond to the number of circles, and are constructed of different lengths. The hands move upon a common centre, but are capable of an adjustment, so that the distances between each of them may be made to correspond to the difference in time of the places marked on their respective circles.

Claim.—The application of two or more sets of hands a^* a'^* b^* b'^*, and so forth, secured to a common centre *g*, and operating in combination with two or more concentric dials *a b*, &c., substantially as and for the purpose set forth.

No. 46,497.—Washburn Race, Lockport, N. Y.—*Skates.*—February 21, 1865.—This invention consists in the employment of an independent heel screw for skates, in connection with the standard of a skate runner and the wooden bed, so that the screw serves the double purpose of securing the parts together, and adjusting them higher or lower, to compensate for the enlargement of the hole in the boot in which it rests.

Claim.—The combination of the heel screw *c*, bearing *a*, and nut *f*, with the bed A and runner B, substantially as and for the purposes herein described.

No. 46,498.—Robert Ramsey, New Wilmington, Penn.—*Bag-holder.*—February 21, 1865.—A standard is pierced with a vertical slot, through which passes a screw bolt, to which are attached arms, which are provided with a spring formed in one piece with them, by means of which, having been drawn together so as to be introduced within the mouth of a bag, they are expanded so as to hold it open. By means of the screw bolt in the vertical slot the arms may be adjusted at a height to suit the length of the bag.

Claim.—First, forming the expanding spring A2 in one piece of metal with the spreaders A A′, substantially as and for the purpose set forth.

Second, the screw bolt C and nut E, employed in combination with the spreaders A A′ and hooks *f f*, in the manner and for the object herein before stated.

No 46,499.—Thomas Roberts, Shelby, Ohio.—*Stove Drum.*—February 21, 1865.—This invention consists in constructing an annular chamber, with cone-shape ends, so arranged that the inner top casing can be extended or contracted by means of a lever passing through openings in opposite sides of the annular chamber, thus increasing or decreasing the radiating surface, and controlling the draught. The heat from the inner casing can be carried off to heat upper rooms.

Claim.—The cone end chambers or sections E and E,′ annular chamber D, and the lever F, in combination with the tubes or pipes *m* and *n*, damper B″. and drum, when arranged and operating conjointly, substantially as and for the purposes set forth.

No. 46,500.—Herman Rugee, Milwaukee, Wis.—*Heat Radiator.*—February 21, 1865.—In this invention segmental wings, forming an inverted cone, are arranged in a stove-pipe drum, and adjusted by links or rods connecting with a crank. When opened the products of combustion pass freely through the drum, and when closed they flow through a narrow opening between the base of the cone and the case of the drum.

Claim.—The adjustable segment wings forming an inverted cone, in combination with the crank, links, or rods for adjusting the wings, substantially as shown and described.

No. 46,501.—Peter Schutler, Chicago, Ill.—*Machine for Holding Hubs while being Bored.*—February 21, 1865.—This invention consists of a machine composed of two cylinders, the one within the other, and to which the wheel is centrally clamped and firmly held, the boring being done by revolving the wheel instead of the cutter.

Claim.—The application of a screw ring D, which is provided with clamps *c c c*, to a holder C, which is applied to a rotating shaft B, substantially as described.

No. 46,502.—Jacob Leibel.—Manlius, Ill.—*Harvester.*—February 21, 1865.—This invention has reference to the "thrust machine," and consists in arranging a trough at the back and midway the length of the cutters, on either side of which is an endless apron which receives the falling grain and discharges it into said receiver. An attendant occupies a stand back of the receiver and upon the main frame, and rakes the grain therefrom to one or the other of the two binders' stands, arranged on the main frame, on opposite sides of the raker's stand.

Claim.—First, the centrally arranged receiver *o*, constructed as described, in combination with the two endless aprons revolving towards the centre of the machine, and depositing the grain in said receiver, substantially as and for the purposes specified and shown.

Second, the platform Q, provided with the space *l*, when arranged in relation to the main frame and endless apron, substantially as and for the purposes specified.

Third, providing a harvesting machine, with the raker's stand P and the binders' stands R and S, when arranged on the main frame of the machine near the centre thereof, substantially as and for the purpose herein described.

No. 46,503.—CHARLES H. SHUTE, Edgartown, Mass.—*Rotary Photographic Plate-holder.*—February 21, 1865.—This invention consists in a mode of rotating the plate by a lever and ratchet, so as to bring a fresh part of the plate opposite the opening at each movement of the lever.

Claim.—The combination of the photographic dark slide A, having an orifice B and slide C, with the rotating box carrying the plate, and pierced in the face with a series of openings to correspond with the opening B as they are alternately exposed to it, the said box being rotated by a lever by means of a pin working into a ratchet on the back part of the lid G, the circuit of the ratchet wheel being divided to correspond with the orifices in the face of the rotating box.

No. 46,504.—JOHN W. SMITH, Boston, Mass.—*Rivets.*—February 21, 1865.—This invention consists in making a conical cavity or recess in the end of a rivet, to facilitate the process of spreading, by the blow of the hammer.

Claim.—A rivet constructed with a recess in its end, substantially as and for the purpose herein specified.

No. 46,505.—THOMAS SMITH and HENRY J. BROWN, Detroit, Mich.—*Tobacco Pipe-stem.*—February 21, 1865.—This invention consists in a chamber in the stem of a pipe for smoking; said chamber has in it two small tubes; over the lower one of these tubes a cap is fitted. This chamber is filled with water, which serves to cool the smoke, and also to extract from it the "nicotin." The cap serves to keep the water out of the tube, and also to impart a circuitous route to the smoke.

Claim.—The combination of the stem B B, chamber *c c*, and tubes D E, and the cap F, all constructed and operating substantially as and for the purpose set forth.

No. 46,506.—CHARLES W. STAFFORD, Saybrook, Conn.—*Construction of Ordnance.*—February 21, 1865.—In this invention two or more wrought bands, with tongues and grooves, are shrunk or secured on the breech. In front of these is another band, carrying the trunnions, having an inward projection at its rear, and abutting against a shoulder of the cannon in front. This projection and the bands supporting it behind take the recoil.

Claim.—First, in combination with the cast main body A of a piece of ordnance, two or more bands, (trunnion and re-enforce,) when secured and strengthened with longitudinally projecting tongue *r* and corresponding grooves, in the manner as herein represented.

Second, the combination of the trunnion band U, adapted to slip on over the breech, the flange *u*, projecting inward from the said trunnion band, the shoulder *a*, preventing forward displacement of the trunnion band, and one or more re-enforce bands R, securing it against backward displacement, substantially as herein described.

No. 46,507.—WILLIAM B. S. TAYLOR. New York, N. Y.—*Flexible Tubing for Illuminating Gas.*—February 21, 1865.—This invention consists in lining flexible tubing with glue alone, or in combination with other substances, such as molasses, glycerine, &c.

Claim.—The use and application of glue or glue composition in the tubing, substantially as described, for the purpose of making the flexible tubing gas-tight, whether of cloth or rubber or other gum.

No. 46,508.—C. R. TOMPKINS, Rochester, N. Y.—*Machine for Cutting Barrel Heads.* February 21, 1865.—This invention consists in providing a parallel lateral adjustment to the movable feed roller by hanging both ends in sliding boxes that are connected to an adjusting lever, and connecting the pinion that drives the feed roller to the shaft by a slot and feather, so as to keep it in gear with the feed roller pinion by means of an arm connected to the upper sliding box; also, in such a construction and arrangement of the connecting rod pawl and ratchet that the crank shall produce an intermittent feed, and during the instant the knife is at its upward stroke.

Claim.—First, the combination and relative arrangement of the rock shaft P and lever K with the upper and lower boxes *f* and *f'* of the adjustable feed roller *d*, substantially in the manner shown and for the purpose of producing a parallel adjustment of the said roller.

Second, in combination with the adjustable pawl arm *y* and ratchet *a* the crank J and slotted connecting rod R, substantially in the manner shown, and for the purpose of producing the intermittent feed, as set forth.

No. 46,509.—JOHN TRAGESER, New York, N. Y.—*Coils for Steam Heating Apparatus.*—February 21, 1865.—This invention consists in the arrangement of pipes connected with the supply and exit pipes, and by means of other pipes, the ends of which are formed with conical seats, ground to each other and held together by couplings, so as to be steam-tight but allow of a turning motion at said parts.

Claim.—First, the arrangement of the pipes *f i* and *k*, whereby the axial pipe *k* is allowed to expand or contract without injury to the joints, as set forth.

Second, the T pipes *d* and *l*, in combination with the coil *p* and couplings, whereby said coil can be twined up, as specified.

Third, the conical ground couplings applied, substantially as specified, to the coils of steam heating and boiling apparatus, so that said coils will be kept steam-tight at the joints and motion allowed for turning said coils up, as set forth.

No. 46,510.—JOHN VOAK, Penn Yan, N. Y.—*Curry Brush or Card.*—February 21, 1865.—In this invention there is a revolving brush and card, with receptacles for dust. The brush and card are revolved by wheels turned by a crank.

Claim.—The frame A, handle *a*, shoulder rest *a'*, and gearing C B, in combination with the brush E and receptacle F, the several parts being constructed, arranged, and operated as set forth.

No. 46,511.—WILLIAM WALES, Fort Lee, N. J.—*Microscope.*—February 21, 1865.—This invention consists in the application of two or more lenses or correctors, in combination with the same microscope object glass, in such a manner that the angle of aperture is left for natural reflected light, in contradistinction to the use of two or more front lenses which have to be changed and shifted to be adapted to central and oblique light.

Claim.—The application of two or more back lenses or correctors, in combination with the same microscope object glass, constructed and operated substantially as and for the purpose set forth.

No. 46,512.—JOHN H. WEEKS, Philadelphia, Penn.—*Retainer for Window Sash.*—February 21, 1865.—This invention consists mainly in the arrangement of the bolt, lever, and spring, by which the bolt is operated, and in their relation to each other for joint action.

Claim.—The combination of the lever E, its knob G, and arm or projection *e*, the spring *k*, bolt D, and its lip *c*, the whole being constructed, applied to a sash, and arranged for joint action, as and for the purpose herein set forth.

No. 46,513.—WILLIAM WEITLING, New York, N. Y.—*Device for Equalizing the Delivery of Thread from Shuttles and Spools of Sewing Machines.*—February 21, 1865.—The claim and drawings illustrate the nature of this invention.

Claim.—The application to the spool or bobbin in a shuttle, or other part of a sewing machine, of a thread leader, having a motion in the arc of a circle, and constructed and operated substantially in the manner and for the purpose described.

No. 46,514.—BENJAMIN WILDER, North Scituate, Mass.—*Apparatus for Softening the Gum of Adhesive Labels.*—February 21, 1865.—This invention consists of a vessel to contain water and a lamp, by means of which the water may be heated, the whole being placed within a suitable case or frame. Over the top of the vessel is stretched a piece of woollen cloth, or other similar material, upon which the labels are placed with the gummed side downward.

Claim.—The apparatus, substantially as and for the purpose described.

No. 46,515.—J. M. WILTSIE, Pittsford, N. Y.—*Apparatus for Distributing Fertilizers.*—February 21, 1865.—This invention consists in a handle provided with a catch or lock, so as to be made rigid or capable of being turned down to fill the vessel, and also in placing the register upon the inside of the vessel, and providing bars to keep the fertilizer from packing.

Claim.—First, the swinging self-locking ball or handle B, applied and operated in the manner and for the purpose specified.

Second, the application of the bars C in distributers for lime and other fine fertilizers, to be used by hand as shown, and for the purposes set forth.

Third, arranging the register plate D within the case as shown, and for the purposes described.

No. 46,516.—WILLIAM LOUIS WINANS, Baltimore, Md.—*Operating Ordnance on Gunboats.*—February 21, 1865.—The gun-carriage is formed in two parts, the upper section swivelling upon the lower sections, and is supported on an adjustable chassis, the whole being raised and lowered by steam-power, and also supported on hydrostatic cylinders, which control the descent of the platform and its carriage. Sliding hatchways are opened and closed by the raising and lowering of the gun platform.

Claim.—Mounting the carriage of a gun on a platform which is connected with a plunger, to be elevated by the admission of steam to the cylinder, substantially as described, in combination with the connection of the said platform with other plungers fitted to cylinders to regulate the descent of the platform and gun by the flow of water or other fluid, substantially as described, and for the purpose specified.

Also, making the plungers, for regulating the descent of the platform and gun, with a cavity in the lower end thereof to retain air, substantially as described, to act as a spring cushion to receive sudden and violent concussions, as set forth.

Also, in combination with the mounting of a gun on a platform to be raised and depressed, the employment of a chassis connected with the platform and interposed between it and the carriage, and provided with wedges, or the equivalent thereof, to vary the inclination of the chassis, substantially as and for the purpose specified.

Also, connecting the upper part of the carriage, in which the gun is mounted, with the lower part thereof by means of a swivel, in combination with the chassis connected with the movable platform by which the gun is raised to be fired and let down to be reloaded, substantially as and for the purpose described, whereby the gun can be turned to take any range desired, notwithstanding the platform, by reason of its connections, cannot be turned.

Also, in combination with the platform for raising and letting down the gun, as described, the employment of sliding hatchways, so connected with the platform as to be operated by the motions of the platform, substantially as and for the purpose specified.

No. 46,517.—GEORGE L. WITSILL and EDWARD BURKE, Philadelphia, Penn.—*Well Borers.*—February 21, 1865.—The object of this invention is to combine with a central upward discharging rock drill a contrivance for elevating the fine debris to the top of the well, and thus keeping the drill clear during the operation of boring.

Claim.—First, the employment of two or more augers, in combination with a central upward discharging drill, substantially as described.

Second, connecting the augers A A *a'* to the drill collar N in such manner that the augers can be rotated independently of the drill, or can be made to rotate the drill at pleasure, substantially as described.

Third, the centre drill point C, ploughing cutters B B *b*, collar N, and the right and left twisted elevators A A *a'*, combined and operated substantially as herein described.

Fourth, feeding the augers down to their work by means of right and left screws *p p' p p*, applied and operating substantially as described.

No. 46,518.—HENRY WURTZ, New York, N. Y.—*Preparing Barrels to Hold Oil, Petroleum, &c.*—February 21, 1865.—This invention consists in saturating the staves of barrels, tanks, &c., with a deliquescent salt, such as chloride of magnesium, and in afterwards applying a coating of hard soap solution, or a coating of starch or other paste.

Claim.—First, the introduction into the pores of wood and other porous materials, when used as materials for barrels or other vessels for holding oils, of aqueous solutions of deliquescent salts, as above set forth.

Second, the subsequent superficial application to such substances or agents which convert the deliquescent salts into insoluble compounds, as above set forth.

Third, the method of preparing barrels and other vessels composed of wooden staves, bound by hoops, for holding oils by filling them with deliquescent saline solutions and tightening the hoops as the wood shrinks by absorption of the liquid, as above set forth.

Fourth, the prevention of the corrosion of iron hoops, nails, and other iron fastenings of barrels and other vessels for holding oils, when impregnated with solutions of deliquescent salts, by adding to such solutions sucrate of lime, as above set forth.

Fifth, the application to the internal surface and between the joints of barrels and other vessels for holding oils, of a paste composed of deliquescent saline solution, combined with some substance of a gelatinous, glutinous, mucilaginous, farinaceous, gummy, or starchy nature, as above set forth.

No. 46,519.—VARNUM G. ARNOLD, Boston, Mass., assignor to himself and CHAS. G. BIRD, Roxbury, Mass.—*Ticket Holder.*—February 21, 1865.—The tickets are placed in a box on the roller, or are folded and the outward end passed over a bar and under an aperture, where they can be pushed forward for delivery by the thumb, successively, as wanted.

Claim.—A holder or case for passage tickets constructed with a delivery duct, in combination with an aperture A in the side of the same for the delivering the tickets one by one by the action of the thumb, substantially as herein described for the purpose specified.

No. 46,520.—HEZEKIAH BRADFORD, New York, N. Y., assignor to H. BOGART.—*Roasting and Desulphurizing Ore.*—February 21, 1865: antedated February 16, 1865.—Finely pulverized ore, while contained in a chamber, is subjected to numerous jets of superheated steam or heated atmospheric air, or both combined, which are forced through the charge so as to agitate it and act upon all the particles. That part of the charge which passes off with the jet of gas is saved by being directed into a reservoir of water.

Claim.—First, the process, substantially as herein described, of treating metallic ores in a finely divided or pulverized state in a chamber with jets of superheated steam or heated air, or both, jointly forced through the charge, substantially as and for the purposes specified.

Second, retaining the fine particles of ore that pass off from the ore chamber with the steam, air, or gases by passing the same into or through water, substantially as set forth.

Third, discharging the finely pulverized ore from the ore chamber through a pipe into a vessel or reservoir of water by the pressure of the air, gas, or steam, substantially as set forth.

No. 46,521.—Joseph R. Brown, assignor to Brown & Sharpe, Providence, R. I.—*Milling Machine.*—February 21, 1865.—A reference to the description and drawing will be necessary for a proper understanding of this invention.

Claim.—First, the combination of the elevating knee H, the sliding plate E, the swivel plate L, and sliding carriage G with the revolving cutter head, constructed and arranged to operate substantially as described.

Second, the arrangement of the centre spindle *b*, or its equivalent, with the devices which actuate and govern the movements of the same, in combination with the sliding carriage G and the devices by which it is operated, so that the two mechanisms may operate either separately or conjointly, substantially in the manner described.

Third, the arrangement within the centre head F of the swinging block R, or its equivalent, and the revolving spindle *b*, with the devices which operate the same, substantially as described for the purpose specified.

No. 46,522.—Elizur E. Clarke, assignor to Franklin N. Clarke, New Haven, Conn.—*Machine for Cutting Pasteboard for Boxes.*—February 21, 1865.—This invention consists in a peculiar mode of holding the cutters, which slide in grooves and are adjusted by a scale which is conveniently located.

Claim.—The method of holding and adjusting the cutter, without the employment of the cutter stock, by combining with the cutter bar, having two side grooves and one tap groove, a cutter holder, slotted or grooved vertically for adjustment on a binding bolt, and horizontal sliding cross or T stud, together with the horizontally sliding form and collar screw for the vertical adjustment of the cutters, substantially as set forth.

Also, the attachment to the cutter bar of the parallel or horizontal beam or cap, set at a distance apart, to admit of the groove of the screw nut, in combination with grooves in both the said cutter bar and beam, to admit of the collar of the screw nut, the whole being arranged for operation substantially as set forth.

Also, the mode herein described of locating and holding a rule or scale in its proper relation with respect to the cutter by combining with the cutter bar and uprights, brackets or the equivalents thereof, in the manner substantially as hereinbefore shown and described.

No. 46,523.—J. W. H. Doubler, assignor to himself and John E. Wynne, Warren, Ill.—*Grain Drill.*—February 21, 1865; antedated February 6, 1865.—In this invention the drill is quite heavy and solid, with a front cutting edge to enable it to pass through sods or lumps of earth. The upper part of the drill is funnel-shaped, so that when moved forward or backward upon an adjustable beam the seed will always be properly conveyed. In the bottom of the seeder is a spiral distributer divided into as many distinct sections as there are drills, for the purpose of securing a perfectly uniform distribution of the seed.

Claim.—First, the hollow drills F G, constructed, arranged, and operating as and for the purposes herein specified and shown.

Second, the combination of the drills aforesaid with the adjustable bar H and lever *g*, arranged and operating substantially as and for the purposes shown and described

Third, in combination with the above, the parallel bar L and the chains *p*, arranged and operating as and for the purposes set forth.

Fourth, the curved arms J, provided with the slot *j* and set screw *k*, arranged as and for the purposes specified.

Fifth, providing the spiral distribution D with the several bearings *f f'* so as to divide the same into separate compartments, substantially as and for the purposes herein delineated and set forth.

No. 46,524.—Joseph Goodman, Blackfriar's Road, England, assignor to Charles P. Button, New York, N. Y.—*Carriage Wheels.*—February 21, 1865.—This invention consists in the employment of a disk with a conical central bore, in combination with a grooved plate and its central opening, and with the spokes and felly or tire of the wheel, in such a manner that by screwing the disk and plate together the spokes are forced out to a uniform distance from the centre and securely clamped, and the felly or tire is equally strained throughout the whole circumference and brought in the position of a true circle.

Claim.—The disk I, with the conical central bars J, in combination with the grooved disk L and its central openings *a*, and with spokes C and felly or tire D, constructed and operating substantially as herein described, so that by screwing the two plates together the spokes are forced out to a uniform distance from the centre and securely clamped.

No. 46.525.—Thomas Geo. Harold, Brooklyn, N. Y.—*Mosaic Toy Blocks.*—This invention is sufficiently described by the claim.

Claim.—A series of square or cubical blocks whose surfaces are colored in triangular forms, as and for the purposes specified.

No. 46,526.—John R. Harrington, Brooklyn, N. Y., assignor to Agnes V. Harrington, Brooklyn, N. Y.—*Tuyere.*—February 21, 1865.—In this device one side of a box is formed of a projecting funnel or cone, which, being exposed to the fire, heats the air which is made to impinge against it by being forced through a tube from the nozzle of the bellows. The

outlet is through another tube, which extends from the mouth of the funnel back into the box to within a short distance of the rear side

Claim.—In combination with the box A, provided with the projection *a* and tube a^3, the back B, provided with the tube b^3, when the same shall be combined and operated in the manner and for the purpose specified.

No. 46,527.—Edwin A. Leland, assignor to Radcliffe B. Lockwood, New York, N. Y.—*Gas-heater or Blow-pipe for Heating Soldering Irons.*—February 21, 1865.—This invention consists in the construction of a sheet-iron casing of a long funnel, horn-shaped, in which is enclosed a blow-pipe, or smaller horn, of nearly corresponding form, the large end being made of sheet metal, and the smaller end, for several inches in length, of wire gauze, terminating at the smaller end of the outside casing. This device is operated by placing the soldering iron in the small end surrounded by the wire gauze, the handle being supported in place and having a suitable bracket attached to the casing. A gas pipe is opened in the larger end between the inner and outer funnel, where it receives a large admixture of air, and in passing up is ignited, where it escapes through the wire gauze, the intensity of the flame being promoted by a blast through the inner horns.

Claim.—The new article of manufacture, consisting of a gas furnace or blow-pipe, constructed substantially in the manner described, for the purpose of heating soldering tools, and for other similar purposes.

No. 46,528.—Samuel Macferran and Stephen Ustick, assignors to Samuel Macferran, Philadelphia, Penn.—*Coat and Hat Rack.*—February 21, 1865.—This invention consists in the combination of a bar with sliding hooks, and brackets with hooks.

Claim.—The combination of the segmental or elliptical bar A, the hook B, the bracket C, and hook B′, substantially in the manner described and for the purpose above set forth.

No. 46,529.—Henry F. Metzler, assignor to himself and Thos. G. Cowperthwaite, New York, N. Y.—*Spring Horse.*—February 21, 1865.—In this device two parallel bars are connected with the under part of the hobby-horse at their upper ends, while the lower ends are fastened to the axes of the pulleys, having spring bands. The horse when moved forward or backward has a motion which resembles the jumping motion of a living animal.

Claim.—The manner in which the standards are arranged, combined, operated, and adjusted relatively to their several parts and to the horse baby-tender or chair, whereby the several motions, as described, are obtained.

No. 46,530.—Thomas Mayor, Pawtucket, R. I., assignor to George Chatterton, Providence, R. I.—*Roving Frame.*—February 21, 1865.—This invention consists in giving a firm support and bearing to the top of the spindle, and also to admit of its running with uniform steadiness at the highest rate of speed. The bolster or upper bearing is so constructed and connected to the traverse rail as to extend this bearing near to the top of the spindle, and to reciprocate the said bearing between the top of the spindle and the delivering point of the flyer. The foot piece of the bolster is secured to the side of the rail instead of upon its top.

Claim.—The construction and mode of arranging the bolster with the spindle and the transverse rail, or its equivalent, substantially as described for the purpose specified.

No. 46,531.—Lyman F. Munger, Rochester, N. Y., assignor to himself and Walter K Marvin, New York, N. Y.—*Lock.*—February 21, 1865.—The nature of this invention will be understood from the claim.

Claim.—First, the combination in a lock case of frictional key tumblers, bolt and fence tumbler, together with the follower or lever to actuate the same under the arrangement herein described, so that both the said key tumblers and bolts when actuated shall move in planes parallel to each other, substantially as set forth.

Second, in combination with horizontally sliding key tumblers and double-gated bolt, the double-acting fence tumbler, operating as described, so as to lock the bolt whether shot out or withdrawn, substantially as set forth.

Third, the method herein described of operating the key tumblers by forming a cam groove in the fence tumbler, in combination with a pin passing through and projecting from the said key tumblers, the whole being arranged for operation substantially as set forth.

No. 46,532.—Joseph Rider, Newark, Ohio, assignor to himself and E. Remington & Sons, Ilion, N. Y.—*Breech-loading Fire-arms.*—February 21, 1865.—In this invention the hammer is hung to the side of the arm, which is hinged to a slotted tug extending laterally. It has a nose or extension on its under side, which enters a slot made through the top and bottom of the barrel when in place, closing the breech and forming the recoil piece. On the front side of this tug is inserted a spring hinged-lever, having a projection at each end; as the hammer flies home into its seat this spring lever explodes the cartridge, its lower end being forced back and its top forward.

Claim.—First, combining with a hammer that is hung upon the side of the arm, and moves at right angles to the bore of the gun, a nose or projection, which, shooting into a mortise through the barrel, forms a breech-piece, substantially as and for the purpose described.

Second, combining with such a hammer, or the projection thereon, a pivoted trigger of lever, for striking or impinging upon the cartridge, and thus exploding it simultaneously with the closing of the arm, substantially as herein described.

No. 46,533.—E. B. SINTZENICH, assignor to himself and JOSEPH HALL, Rochester, N. Y.—*Steam Boiler.*—February 21, 1865.—This invention consists in the arrangement of water flues or tubes within the horizontal fire flues of steam boilers, and in the combination and arrangement of the manhole with the flues in such a manner as to afford facilities for repairing and cleaning the same. A combustion chamber is placed in the water space above the fire box to which fire flues are attached, and which extend back to near the rear end of the boiler, where they connect with another combustion chamber. Through these flues tubes filled with water pass, the front ends of which are turned at right angles, and pass down and are attached to the lower sheet of the front combustion chamber, through which they communicate with the water space of the boiler, their rear ends communicating with the rear ends at the rear. The manhole opens into the front combustion chamber, and affords a means of access thereto and to the tubes and flues.

Claim.—First, the arrangement of the water flues centrally within the horizontal fire or combustion flues of marine boilers, as shown, and for the purposes set forth.

Second, the combination and relative arrangement of the manhole D with the horizontal return fire or combustion flues and their water flues, the latter having their front ends connected with the water space surrounding the combustion chamber I, substantially as shown and described and for the purpose herein set forth.

No. 46,534.—CORNELIUS ST. JOHN, assignor to ROSCOE G. TURNER, assignor to CHARLES C. BEERS, Boston, Mass.—*Shade-holder for Lamps.*—February 21, 1865.—This invention consists in a socket and spring support, by means of which the lamp shade is supported, not on the chimney, but on the lower part of the burner, so that the shade may not become heated and charred.

Claim.—The spring support C, in combination with a socket D, operating substantially in the manner and for the purpose set forth.

No. 46,535.—JOHN CHAPMAN, M. D., Somerset street, Putnam square, London, England.—*Means for Applying Heat and Cold in Treatment of Diseases.*—February 21, 1865.—This invention consists of an apparatus composed of India-rubber bags divided into cells, which, when filled with hot or cold water, are applied to different portions of the spinal column.

Claim.—The manner of applying heat and cold, solids or fluids, by means of "spine bags," composed of India-rubber or other water-proof flexible material, when said bags are divided into two or more cells or compartments, whether such cells or compartments are formed by the pressure of clamps upon the exterior or by the use of one or more interior partitions.

Also, spine bags for making hot applications, when such bags are composed of two or more tubular compartments.

No. 46,536.—CARL SCHINZ, Offenburg, Grand Duchy of Baden.—*Furnace for Burning Gas.*—February 21, 1865.—This invention consists of a furnace enclosed in thick brick walls, in combination with a generator, which is provided with a fire grate, the fuel being introduced through a charger. The combustible gases rise through the channel, which is provided with a gas splitter, consisting of a series of small channels. The air is introduced through the channels, which are closed and opened by a slide, and a window, which allows the process to be observed. The mixed air or gases are burned in the channels or flues, and the products of combustion pass into the space under the boilers, where they give up their heat, and they are finally carried off by a chimney.

Claim.—First, the employment or use of the gas splitter G, with two or more tuyeres *k*, in combination with the generator C, air inlet *i*, and combustion flue *o*, or its equivalent, constructed and operating in the manner and for the purpose substantially as herein specified.

Second, the employment or use of two or more air tuyeres *i*, in combination with the channel F rising from the generator C, and with the combustion flue *o*, or its equivalent, constructed and operating substantially as and for the purpose set forth.

Third, the employment or use of two or more combustion flues *o*, proportioned according to the rules above specified, and arranged in combination with the gas channel F and air channel or channels *i*, substantially in the manner and for the purpose set forth.

Fourth, the application of a window J in front, and one or more loopholes *q* in the rear, of the combustion flues *o*, substantially as and for the purpose specified.

No. 46,537.—WM. BANKSON, Mt. Pleasant, Iowa.—*Cultivator.*—February 28, 1865.—This invention consists in attaching four shovels or ploughs to the frame, which is made in width to suit the corn planter, of any desired gauge. This frame is hung on the outer frame by a rod, and raised up or let down at will by a lever on the centre of the machine; the forward end of the lever is attached to the front bar of the frame by a chain, and the position of the lever when raised is held by a hook or catch on a bar at the end of the machine. The front shovels are moved from right to left, being suspended on a rod or bar at

the front of the frame by a lever loosely bolted on its centre, and moving on its own fulcrum through a cross-bar in the centre of the frame, and passing under another rod or bar at the rear end of the machine, so that the front shovels may be controlled by the driver from his seat by ropes attached to the lever and brought over pulleys in the corner of the frame and from thence to the right and left side of the driver's seat.

Claim.—The frame F F, the lever L, the suspension of the ploughs 3 and 4 on bar X and the moving of them with the lever N, when constructed substantially as described and for the purpose set forth.

No. 46,538.—W. W. BATCHELDER, New York, N. Y.—*Lamp.*—February 28, 1865.—The nature of this invention consists in the combination of certain safety valves with lamps, wherein the pressure of the gas inside the reservoir aids in feeding the flame, to secure the reservoir from possible explosion.

Claim.—The combination of the safety or controlling devices herein described with a lamp, constructed and operating as herein described.

Also, the combination of the controlling conical screw E *g* with the cap B, tube C *i*, and lamp reservoir A, all constructed and operating in the manner and for the purpose substantially as described.

No. 46,539.—WILSON BOHANNAN, New York, N. Y.—*Padlock.*—February 28, 1865.—This invention consists mainly in the combination and arrangement of a vibrating spring pawl, with a spur projecting downwards from the hinged end of the shackle, and also of the pawl, with the tail of the dog, which locks the free end of the shackle; the arrangement being such that so soon as the dog releases its hold the shackle will be thrown back and held so by the pressure of the pawl upon the spur, while at the same time a tooth projecting from the edge of the pawl will catch under the tail of the dog and thus hold the tooth of the dog back and out of the line of travel of the shackle until the action of the key upon the dog forces it from its connection with the pawl.

Claim.—First, so constructing a padlock that in the act of closing the shackle B this latter will release the hooked plate *d'* from a toothed pawl *b* previously to locking, and still act upon the said plates, substantially as described.

Second, receiving the hook *d* on the catch plate *d'*, in the act of closing the shackle B upon the nose of this shackle, after said plate is released from the tooth *j* of pawl *b*, substantially as described.

Third, so constructing the teeth *i j* on the pivoted plates *d'* and *b* that, in the act of closing the shackle, the latter will force the hook *d* backward to receive the nose *c*, substantially as described.

Fourth, the combination of the shackle B, with its slotted nose and lever-tooth spring pawl *b*, with its tooth *j*, catch plate *d'*, with its hook *d*, and tooth *i*, and the slotted tumbler or tumblers *g g'*, all arranged and operating substantially as described.

No. 46,540.—JACOB BRINKERHOFF, Auburn, N. Y.—*Corn Sheller.*—February 28, 1865.—In this machine the ears of corn, while being shelled, are caused to rest upon a bed-piece of peculiar shape, which admits of the free passage of the shelled corn, which falls from thence upon a screen.

Claim.—The bed-piece M, constructed as and for the purpose herein set forth.

No. 46,541.—MARCUS BROWN, Fond du Lac, Wis., and OSCAR J. SHANNON, Fairwater, Wis.—*Fence.*—February 28, 1865.—In this fence the posts are bevelled at the ends diagonally from each other. The lower end is inserted into a link or band, which is smaller than both posts, with the bevel towards the standing post, and by bringing it up to a vertical position the link is embedded in the wood and holds it firmly. The upper end is held by placing another link around the top of both; the bevel being outward allows the link to pass over the ends of both.

Claim.—First, constructing a fence with posts having bevels *d d*, substantially as and for the purpose set forth.

Second, the bands *e*, or their equivalent, in combination with bevelled posts *a a'*, substantially as and for the purpose set forth.

No. 46,542.—CHARLES E. CARPENTER, Providence, R. I.—*Electro-magnetic Signal-boxes.*—February 28, 1865.—The nature of this invention is evident from the claim.

Claim.—A signal box provided with an aperture to admit the finger, and having a diaphragm of paper or other suitable material extended across the inner mouth of the aperture, the position of the diaphragm being such that the signal knob or lever cannot be moved without breaking the paper.

No. 46,543.—JAMES B. CLARK, Plantsville, Conn.—*Tag-making Machine.*—February 28, 1865.—This machine can be described intelligibly in detail only, consisting, as it does, of the combination and arrangement of parts which automatically seize the slip of paper, fold its corners inward, puncture and excise the tag, the whole being operated by a crank-shaft and twofold gearing.

Claim.—First, the combination of the plates *y y* and *t t*, substantially as herein described, for the purposes set forth.

Second, the combination and arrangement of the punch H and plate *x*, over which the folds of the tag are made, substantially as described and for the purpose set forth.

No. 46,544.—STEPHEN D. COOK, Lima, Mich., and HENRY J. WEBB, Dexter, Mich.—*Seeding Machine.*—February 28, 1865.—A stationary hopper is provided with a reciprocating rake at its bottom, the rake serving as a measurer and letting the same quantity of seed pass at each stroke into the distributing trough. The trough has also a reciprocating motion derived from its connexion with the wheels, and distributes the seed with regularity.

Claim.—The employment of the rake R, in combination with the "shaking and oscillating seed-distributing trough" T, operated substantially as and for the purposes specified.

No. 46,545.—JOHN D. CROCKER, Norwich, Conn.—*File-cutting Machine.*—February 28, 1865.—The most important feature of the machine, which embodies the improvements claimed, is a file blank bed or support, susceptible of a rectilinear reciprocating as well as oscillatory movement, the rectilinear movement not being intermitting as in other machines of this character, but constant. For this purpose there is a screw connected to the file bed in the usual manner, one end of which projects beyond the bed so as to form a handle by which the oscillating movement may be imparted to the bed, while the other end carries a bevelled cog wheel, which, as the bed is turned in one or the other direction, gears with one or the other of two similar bevelled gear wheels upon a cross shaft. This shaft constantly revolving in one direction, it follows that the screw will be turned in an opposite direction, and consequently the rectilinear movement of the bed be reversed whenever the bed is turned round so as to bring the gear wheels in contact with each other.

Claim.—First, the combination of the oscillating table which carries the file blanks and gearing, substantially such as described, so that the operation of cutting the teeth or burrs on the blanks may proceed both as the carriage is fed forward and backward, as set forth.

Second, the combination of the contrivance F with oscillating bed A′ and reciprocating bed A, substantially as and for the purpose described.

Third, extending one end of the feed screw shaft B beyond the end of the bed A′, so as to constitute a handle, B′, for enabling the operator to adjust the bed A′ longitudinally or laterally at pleasure, substantially as described.

Fourth, constructing the hammer with a concave face, in combination with a chisel stock, which is susceptible of being adjusted and set at different angles, substantially as described.

Fifth, so constructing a file machine that its file-supporting carriage can be adjusted after it has moved forward, to be fed backward, and during both of said movements the operation of cutting teeth or burrs on the file blanks is performed, substantially as set forth.

Sixth, cutting and setting file teeth or burrs on blanks by means of a machine, which is constructed and operates substantially as herein described.

Seventh, applying the chisel stock guide J2 to a vertically adjustable slide or support L, substantially as described.

Eighth, the chisel stock holder J2, constructed to slide and swing, and also to guide and support the chisel, substantially in the manner described.

Ninth, providing for adjusting the chisel to cut toward the operator, both in the forward and backward feed of the file carriage, substantially as and for the purpose described.

No. 46,546.—AUGUSTINE B. CROSBY, Boston, Mass.—*Machine for Amalgamating Gold and Silver.*—February 28, 1865.—This invention consists of a series of boxes with perforated bottoms, and containing amalgamated copper plates. The gold and water are conveyed from these boxes to a box containing a series of frames by means of a conduit. The said frames contain amalgamated copper plates, and are kept constantly in motion by means of suitable machinery.

Claim.—The application and use of copper plate, or plates of any materials, placed at an inclination within the body of quicksilver.

Also, the application of a proportion of two or more of submerged copper or other plates to one slot of the slotted diaphragm, so as to produce an alternate action on each plate of the material passing through.

Also, the combination of A, B, C, D, E, F, and G, and of the several figures of the drawing, or any combination of them, for similar purposes.

Also, the application of one or more redivisions of the gold or other metal-bearing material in its passage through the quicksilver, in substantially the manner shown by the drawing.

Also, the application of copper or other metal amalgamated plates, in lattice arrangement, with or without riffles, as shown at J and M of Fig. 1, substantially the same.

Also, the combination, or any similar one, of the parts shown in the drawings by the letters J, K, L, M, N, and O.

Also, the general combination of all the above described parts, as shown by Fig. 2, or any similar one for the same purpose.

No. 46,547.—FREDERICK DECKER, Ostrander, Ohio.—*Clover Harvester.*—February 28, 1865.—The object of this invention is to provide means for gathering the heads of clover, &c.,

in the field, and it consists in the combination of the several parts identified in the claim, from which and the engraving it will be readily understood.

Claim —The described combination of the knife P, fingers H, stripper F G, and reel L, all constructed and employed as and for the purposes specified.

No. 46,548.—C. G. DIBBLE, Farmington, Iowa.—*Stave Machine.*—February 28, 1865.—This invention relates to that class of stave-making machines in which a curved reciprocating saw is employed for sawing the staves from the blocks, in connexion with a reciprocating carriage upon which the said blocks are secured. The invention consists in a method of feeding up the blocks to the work automatically, so that the staves will all be cut of a uniform thickness throughout without the necessity of stopping the machine to adjust the block for each stave that is cut.

Claim.—First, giving an intermittent feed motion to rollers *c c* for feeding the block up to the work, by means of a spur *s* actuating a gauge wheel B3 on the pinion shaft B′, substantially as described.

Second, the combination of a pointed projection *p* on carriage B, with the spurred slide H, substantially as described.

Third, the combination of the spurred feed rollers, applied to head block B2 B2 on carriage B, with the bevel wheels *b′ b′ b b*, shaft B′, and gauge wheel B3, operating substantially as described.

No. 46,549.—CHARLES M. DUPUY, New York, N. Y.—*Manufacture of Iron and Steel directly from the Ore.*—February 28, 1865.—This invention consists in first roasting and desulphurizing the ore by steam or other suitable means, and then heating to about a red heat with the proper amount of carbon in a vessel or chamber which will allow of a sufficient expansion of the gases. Care is taken to exclude the contact of air with the ore during the time the deoxidating process is going on, and in order to prevent the firing of the ore. After thorough deoxidation the spongy metal is converted into blooms, or when steel is to be made it is heated for a longer time in contact with the carbon.

Claim.—The combination of desulphurizing, &c., and oxidizing as herein set forth, with the process of deoxidizing, substantially and for the purposes specified.

Also, the combination of the desulphurizing and deodorizing and carbonizing processes in the manufacture of steel, as described.

Also, the combination of the desulphurizing and deoxidizing processes with the welding furnace, by which iron is manufactured at a low degree of heat, as set forth.

No. 46,550.—A. P. DURANT and D. M. BUCKLEY, Atlantic, Ohio.—*Cultivator.*—February 28, 1865.—This invention consists in a swinging frame with ploughs attached thereto, placed a little below the stationary frame and in front of the axletree thereof, and also in the manner of adjusting and attaching the said swinging frame.

Claim.—The plough frame B B when arranged under the main frame in front of the axletree, and the power applied directly thereto, and when attached, adjusted and operated in relation to the main frame, substantially as set forth.

No. 46,551.—B. A. EARLE, Philadelphia, Penn.—*Lubricant for Wool.*—February 28, 1865.—This invention consists of borax dissolved in milk, in a proper proportion.

Claim.—The use of a combination of milk and borax as a lubricant.

No. 46,552.—RUDOLPH EICKEMEYER, Yonkers, N. Y.—*Machine for Pouncing and Napping Hat Bodies.*—February 28, 1865.—This machine is automatic. The sandpaper or other rubbing surface has a rising or falling motion in an inclined direction so as to act in a conical form; the former revolves on its axis and also traverses to and fro horizontally; it may also be raised and lowered. The India-rubber cushion allows the rubbing surface to yield and then avoid the wearing of the holes in the hat body where inequalities exist. By turning a disk on its axis it rises and falls upon the screw-thread thereon, and so loosens or tightens the hat body secured to the hooks in another disk; the latter resting upon and rising and falling with the first named disk, but not turning with it.

Claim.—First, attaching the pouncing and rubbing surfaces to a roller or its equivalent, which has a movement upon a track or tracks or pattern, parallel with the longitudinal profile of the rotating block upon which the hat is stretched, substantially as herein described.

Second, so applying and operating the shaft of the rotating hat block and the roller or its equivalent, to which the pouncing or rubbing surface is attached, that the one has a transverse motion relatively to the other, substantially as herein specified.

Third, the interposition of a cushion *l′* of India-rubber or other elastic material between the sandpaper *l* and felt *u* or other pouncing and smoothing material, and the roller J or its equivalent to which such materials are attached, substantially as and for the purpose herein specified.

Fourth, a device for stretching the hat body upon the block, consisting of a system of hooks, all connected with disks G and F or their equivalent, having a movement up and down or lengthwise upon the shaft of the block, substantially as herein specified.

No. 46,553.—Rudolph Eickemeyer, Yonkers, N. Y.—*Machine for Stretching Hat Bodies.*—February 28, 1865.—A hat body being stretched upon a conical frame having a ribbed exterior, the frame is elevated by a lever receiving between its ribs the pressure of two series of rollers, and of a ring which binds the body upon the ribbed cone between the two series of rollers, rising with the body from the first to the second series.

Claim.—First, the employment in the process of stretching hats of a skeleton or ribbed and recessed former, substantially such as is herein described.

Second, the pressure ring E in combination with the skeleton or ribbed and recessed former, substantially as and for the purpose herein specified.

Third, the employment, substantially as herein described, in combination with the skeleton or ribbed and recessed former, of pressing rollers K M or their equivalent pressing devices, operating as herein set forth.

Fourth, the combination in a machine for stretching hats of a skeleton or ribbed and recessed former, a pressing ring, and a system of rollers or other equivalent pressing devices, the whole combined and operating substantially as and for the purpose herein specified.

No. 46,554.—Lewis Francis, New York, N. Y.—*Composition for Lining Barrels.*—February 28, 1865.—This invention consists of a composition made as follows: Fifty pounds of glue are soaked in water for five or ten minutes, after which it is removed and allowed to stand five or ten minutes. It is then melted in a steam-kettle, and one hundred pounds of glycerine and fifty pounds of sugar are added, and the whole is boiled for one hour at 200° Fahrenheit.

Claim.—Combining glue and glycerine with or without sugar, to form a new and useful composition, for the purposes specified.

No. 46,555.—James D. Frary, New Britain, Conn.—*Faucet for Oil or other Liquids.*—February 28, 1865.—This invention consists in making the parts A B C of the faucet of cast iron over the plug E. The socket is lined with brass or other non-corrodible metal, or instead the plug may be covered with such metal.

Claim.—As a new and improved article of manufacture a faucet made of iron, having the working surfaces of the orifice and plug made of brass, or brass and iron, in combination with the crooked nozzle *c*, screw or tinned shank *a*, substantially as described.

No. 46,556.—Abram J. Gibson, Cincinnati, Ohio, and George Emerson, Newport, Ky.—*Water Cooler and Purifier.*—February 28, 1865.—The water is purified by filtration, and then cooled by being conducted through pipes in the earth which ascend and deliver it near the level of its head. The invention consists in the combination and arrangement of the pipes and faucets.

Claim.—A purifier C, cooler pipes D and E, and pipes B and G, with faucets F H and K, the arrangement and construction in combination as and for the purpose herein set forth.

No. 46,557.—W. S. Gatchell, Peru, Ind.—*Animal Trap.*—February 28, 1865.—This invention consists of two radial rotating platforms, each held in position by separate triggers, but the wires controlling them come together at the bait-hook which forms one of them. Each wire is connected with a rock shaft, and the triggers or detents are withdrawn by the pulling of the bait by the animal, whose resting place is at the centre, upon two wings. Upon the animal falling into a receptacle below, the trap is reset.

Claim.—The combination of the two rotating radial platforms *b b* operated by means of the wires *i i*, rock shafts *e e* and spring triggers *c c*, and through the pulling of the bait from one hook *k*.

No. 46,558.—E. P. Gleason, New York, N. Y.—*Flexible Tubing.*—February 28, 1865.—This invention consists in making the framework of flattened wire, wound spirally round a mandrel. This tube or coil is then covered with a braided or warm coating saturated with oil or varnish. Another coating of a narrow strip of leather is then wound spirally over this and oiled or varnished, over which is woven or braided another coat which forms the outside, and which is then oiled or varnished. The mandrel is then withdrawn from the finished tube.

Claim.—First, the spiral framework of flat wire, substantially as described for the purpose specified.

Second, a flexible tubing composed of a spiral framework of flat wire or a flat metal strip and an impervious external covering, or both an internal and external covering, substantially as described.

Third, the lubricating impervious covering of leather, substantially as described.

No. 46,559.—Carlos Glidden, Milwaukee, Wis.—*Hot-blast Pipe.*—February 28, 1865.—This invention consists in enlarging certain parts of the pipe, and placing within such enlarged parts a plate or its equivalent, the air being thus made to pass in a thin stratum in the direction of the arrows, as shown.

Claim.—Making hot-blast pipes substantially as herein set forth.

No. 46,560.—Alexander W. Hall, New York, N. Y.—*Amalgamator.*—February 28, 1865.—This invention consists of a rotating cylinder provided with a door and having a hollow stationary shaft perforated on the lower side. One end of said shaft is connected with a retort containing mercury, and the other dips in water in order that the vapor of mercury which escapes may be condensed. The inside of the rotary cylinder is provided with lifters for the purpose of lifting up and turning over the pulverized quartz contained in said cylinder.

Claim.—An amalgamator consisting of a horizontal rotating cylinder with internal lifters C C, a stationary perforated tube or its equivalent, inserted through the hollow journals of the said cylinder for the introduction of the vapor or quicksilver thereinto, and a cock or valve *g* to regulate or control the pressure of the vapor within the said cylinder, the whole combined, arranged, and operating substantially as herein specified.

No. 46,561.—A. W. Hall and Daniel Bentley, New York, N. Y.—*Machine for Crushing Quartz.*—February 28, 1865.—This invention consists in applying pressure to the rollers and so constructing the axles that the rollers can rise and fall when required.

Claim.—First, the taper vertical socket *c c* by which the axle or axles of the several rollers are attached to the central vertical shaft in such manner as to permit either roller to rise independently of the others, substantially as herein specified.

Second, applying pressure to the several crushing rollers by means of a lever *c* and nut *d* or their equivalent, applied directly to the central shaft and operating on all the rollers alike, substantially as herein specified.

Third, the spring *f*, applied in combination with the collars *e g*, washer *h*, nut or bearing *d*, and central shaft A, substantially as and for the purpose herein specified.

No. 46,562.—Patrick Haughian, New York, N. Y.—*Revolving Fire-arm.*—February 28, 1865; antedated August 28, 1864.—This invention relates to the locking dog for securing the cylinder after being rotated, and the novelty consists in employing a swinging bent lever pivoted at the rear of the cylinder and pressed into its appropriate notch in the same by a spring, the disengagement of the said bent locking lever being effected by a pin on the toe of the hammer when being cocked to allow the cylinder to be revolved.

Claim.—First, the arrangement of the cylinder stop lever C to work in rear of the cylinder upon a fulcrum pin *c* situated behind the recoil shield and between it and the hammer, substantially as herein specified.

Second, the combination of the so-arranged lever of the elbow form herein described and represented in figures 1 and 2, in combination with the within described arrangement of the spring *i* to operate upon a shoulder *k* above the fulcrum of said lever, substantially as herein set forth.

Third, a spring-sided stop lever or catch, arranged to work in rear of the cylinder and between the recoil shield and the hammer, in combination with a cam on the hammer, in the manner and under a mode of operation substantially as described.

No. 46,563.—A. H. Hook and John H. Darlington, New York city.—*Skate Feet.*—February 28, 1865.—This invention consists in preparing skate feet for skates of a block of elastic rubber secured by a groove, and so formed as to cling tightly to the skate runner and hold to the blade of the skate by the elasticity of the material.

Claim.—A skate foot made of a block of elastic material so formed as to be attached to and detached from a skate runner, in the manner and for the purposes herein set forth.

No. 46,564.—Wm. T. Horrobin, Biddeford, Me.—*Device for forming Models for Casting.*—February 28, 1865.—This invention consists in supporting the follow-board, on both sides of which the patterns can be secured in and surrounded by a platform on top of a frame, and on which platform the flask is placed. This follow-board is made to fit the opening in the platform accurately, and rests upon parts supported by a lower platform, the height of which can be adjusted by means of a hollow screw beneath. Through this screw and the centre of the lower platform passes a vertical shaft having on its top a long cross-head, the two ends of which, bent upwards at right angles, are pivoted to opposite sides of and sustain between them the follow-board in such a manner as to allow it to be turned either side up, when elevated above the surrounding platform, the vertical shaft being thrust upward by means of a treadle from beneath.

Claim.—First, the swivelled plate I, employed substantially as herein described for presenting different patterns or parts of patterns to the flasks.

Second, the combination of the plate J, rods K, and sliding rod G, for supporting the plate I in its operating position or elevating it to be reversed.

Third, in combination with the above, the retaining fork L *h*, and groove *g*, for preventing the disturbance of the plate I, while in use.

No. 46,565.—M. A. Keller, Windsor Township, Penn.—*Rake for Harvesters*—February 28, 1865.—This invention relates to the construction and arrangement of the devices which impart the necessary motions to the rake, and will be understood from the claim and engraving.

Claim.—First, the self-adjusting universal jointed shaft, with its jointed links *r m n* and *q o p*, sliding disks K K, constructed, applied, and operating as and for the purpose set forth.

Also, the arrangement, in combination with the stationary case B, with its tripper flange S, and guide slides R T, of the cap and its flanges I J, chambered bottom for covering the ratchet wheel E, and containing the click spring connecting it to the gearing, all surrounding a central fixed shaft F, arising from the bottom of the case B, and operated by the bevelled pinion M, in the manner and for the purposes pecified.

No. 46,566.—JOHN JANN, New Windsor, Md.—*Mowing Machines.*—February 28, 1865.—The main frame is a hollow metallic casing cast in two parts, which are secured together by means of screw bolts and nuts, the joint being water-tight for the protection of the parts located in the interior from dust and moisture. The frame is made in this way for the sake of greater smallness and compactness, and that the most simple gearing may be used. The crank shaft which operates the sickle moves in a plane at right angles to the carrying wheels, and thus serves to impart the desired motion.

Claim.—First, the close vertical casing constituting the main frame to which the tongue C, and bearings *b b* of the axle B′, are attached, constructed in sections A A′, enclosing the gearing, substantially as set forth.

Second, in combination with the above, the gearing F G I J, crank shaft K, and pitman N, the whole being arranged to operate in the manner and for the object set forth.

No. 46,567.—W. E. LOCKWOOD, Philadelphia, Penn.—*Paper Shirt Bosom.*—February 28, 1865.—A shirt bosom made of one or more pieces of paper, or of paper and cloth united, is formed in dies or otherwise, so as to retain a concavo-convex form with respect alike to its length and its width, or an egg-like form.

Claim.—As a new article of manufacture, a shirt bosom made of one or more pieces of paper, or paper and cloth, when made convex in front and concave in the back, for the purpose specified.

No. 46,568.—HENRY LOEWENBERG, New York city.—*Fabric for Hats, Bonnets, &c.*—February 28, 1865.—This invention consists in saturating Canton flannel with liquid silex combined with coloring matter, and subjecting the fabric so prepared to the action of dies, by means of which a suitable appearance may be given to the surface of said fabric.

Claim.—The use of Canton flannel or other textile material treated with the composition of liquid silex, or size mixed with coloring matter, for the purpose of dyeing and stiffening the cloth at the same time, and subjecting to the action of a die or dies, substantially as herein described, for the purpose of producing hats, bonnets, &c., with any desired surface which may be glazed with a varnish either before or after pressure, as set forth.

No. 46,569.—RODNEY H. MATHEWS, Painsville, Ohio.—*Invalid Bedsteads.*—February 28, 1865.—This invention consists in preparing a bed furnished with the usual appliances of sick-beds, with a jointed board-bottom, in such manner that the whole may be folded compactly for convenience of transportation.

Claim.—First, the sleeved apron J, of water-proof fabric, constructed and used as described.

Second, the frame A, jointed as described, and consisting of four sections or parts *a b c*, and *d*, the said sections being rigid transversely, but yielding at the joints longitudinally, as and for the purpose set forth.

Third, the foot blocks H H′, and shoulder blocks I D, constructed as described, or any equivalent construction, in combination with the slotted plates *e e′* and *f f′*, or their equivalents, for adjusting and securing them therein, as and for the purpose set forth.

Fourth, the use and employment of the triangular handles D and D′, as herein explained, and for the purpose specified.

Fifth, as a new and improved article of manufacture, the described portable sick-bed and accouching frame, constructed and arranged as stated, and for the purposes set forth.

No. 46,570.—LEONARD MAXWELL, Mitchel, Ind.—*Method of Curing Burns and Scalds.*—February 28, 1865.—This invention consists in applying a thin coating of copal varnish, immediately after the burn.

Claim.—The process of curing burns and scalds by the application of a coating of copal varnish to the burned or scalded parts of the body, substantially as and to the effect described.

No. 46,571.—JOHN MCCLELLAND, Washington, D. C.—*Stop Valve.*—February 28, 1865 —The valve is a hollow cone, the hollow being of a diameter greater than the bore of the pipes. The body of the valve is cast upon and within bronze rings which serve for bearings.

Claim.—First, the hollow sliding stop valve open at the bottom, the same being constructed and operating in the manner described for the purposes herein set forth.

Second, in combination therewith, the rings *a*, constructed substantially as described.

Third, in combination with the invention claimed in the first clause, the rings *a*, applied substantially as described.

No. 46,572.—JOHN MCCLELLAND, Washington, D. C.—*Street Washer.*—February 28, 1865.—A three-way cock opens upward into the wash tube or laterally for the continuous flow in the horizontal pipe, or opens both, or closes both, at the discretion of the operator. When the ascending current is cut off, the reflux escapes through a small aperture in the plug, to prevent freezing. A plate, secured in position by the cap on the eduction pipe, serves to secure in position the plug, and thus preserve both under the control of the person having the key thereto.

Claim.—First, making the lower end of the street-washer cases pointed or cone-shaped, in the manner herein described, for the purposes set forth.

Second, the three-way cock K, pipe C, and key D, arranged substantially as described.

Third, the small channel *i* in the plug *k*, connecting with the orifice *n* and the outlet *o*, to discharge waste-water, as herein set forth.

Fourth, the lugs *p p* and *q q* and the projections *h h* on the cock K, in combination with the nibs *r r* and the case A, for holding the cock firmly in place.

Fifth, embracing the cap F and the rod D of a street-washer by a single attachment substantially as described.

No. 56,573.—G. W. MITCHELL, St. Louis, Mo.—*Spring Mattress.*—February 28, 1865.—This invention consists in the arrangement of parts by which the flexibility and local elasticity of the mattress are secured. The bottom consists of transverse slats, supporting the spiral springs and attached by longitudinal removable locking bars. The springs form frusta of cones, and support rectangular pieces which are united by an elastic membrane. The said pieces have cones which set into the upper ends of the coiled springs and the pieces are tied by cords to the lower slats, so as to regulate the vertical play of the springs. The padded covering of that portion containing the springs is stuffed on the sides and top.

Claim.—First, the guide cones *d*, in combination with the springs A, caps C, and flexible connections *c*, applied and operating substantially as and for the purpose described.

Second, the flexible connecting pieces E, in connection with the caps C of the springs, applied and operating substantially as and for the purpose specified.

Third, the steady pins *b* and locking bars D, in combination with the preceding.

Fourth, stuffing the mattress on the sides as well as on the top, substantially as and in combination with the preceding.

No. 56,574.—JOHN O. MONTIGNANI, Albany, N. Y.—*Carpenter's Hammer.*—February 28, 1865.—This invention consists of a combined hammer and adze, the claws being made somewhat longer and straighter than the common hammer, to the end of which is attached a steel edge connecting the two claws and forming the adze.

Claim.—The method of construcing a hammer by finishing what is ordinarily a claw end with a steel cutting edge like that of an adze or chisel as described in the above specification.

Also, the construction of the cleft for drawing nails, as shown at E, in combination with the above adze or chisel edge.

No. 56,575.—C. L. MOREHOUSE, Cleveland, Ohio.—*Interlined Under-garment.*—February 28, 1865.—A shirt, jacket, or wrapper is made twofold, and so as to open in several flaps for the insertion of a leather interlining.

Claim.—The garment when provided with a detachable interlining of soft leather as herein set forth, the same being a new article of manufacture.

No. 56,576.—DON J. MOZART, New York, N. Y.—*Escapement for Clocks and Watches.*—February 28, 1865.—The staff of the balance wheel has in it a longitudinal notch, into which the teeth of the scape wheel pass, and which is so formed that the scape wheel communicates to the balance a slight impulse. Extending from the shaft of the hooked detent is an arm upon which is a spring bearing against a projection upon the staff. The spring passes through the shaft of the detent, and is so attached as to form a spring to force against the scape wheel. By the action of the balance wheel in one direction the projection upon the staff is made to release the detent, but on its return the springs permit the projection to go by without moving the arms.

Claim.—First, the hooked detent *h* applied to the scape wheel A for arresting the same, in conjunction with a tripping tooth *c* and pallet *e*, arranged and operating substantially as described.

Second, the detent rest *i*, when applied to a detent which is constructed and operating substantially as described.

Third, forming the detent spring *s'* and tripping spring *s* in one piece, and applying the same to the detent staff *j*, substantially as described.

No. 46,577.—DON J. MOZART, New York, N. Y.—*Calendar Clock.*—February 28, 1865.—The hands which indicate upon the disk plate the day of the week, day of the month, and month of the year, are attached to shafts which are caused to revolve by a spring regulated by an escapement attached to the mechanism of the clock. The calendar indicates the extra day of February in the bisextile year.

Claim.—First, causing the wheel B to release the mouth disk C′ once in every revolution of said wheel, by means of a pin k' acting upon the escapement E of said disk, substantially as described.

Second, the pivoted, crescent-shaped escapement E, in combination with the pins p on a notched disk C, when these parts are arranged and operated substantially as described.

Third, the pinion b, cam b, and spring slide s, in combination with the notched disk C and pall H, substantially as described.

Fourth, the notched disk C, constructed as set forth, in combination with levers $b\ b'$, having teeth $a\ a'\ a''$, and lugs $c\ c'$ formed on them, and which are acted upon by a spring $b2$, substantially as described.

Fifth, operating the day hand D by means of the tripping arm $h3$, pawl r, and notched wheel j when said arm is attached to and actuates the escapement of the wheel B, substantially as described.

No. 46,578 —James Nichols and William Batty, Cincinnati, Ohio.—*Powder for Facing Moulds.*—February 28, 1865.—The invention consists in the use of the hard substance or slag which incrusts the bottom and side ends of gas retorts for facing moulds. The substance is prepared for use by reducing it to an impalpable powder and bolting it through wire gauze.

Claim.—The moulders' "facing" powder composed and prepared in the manner described.

No. 46,579.—C. L. Osborn, Brooklyn, N. Y.—*Bird Cage.*—February 28, 1865.—This invention consists in a combination of parts by which the cage is secured to its base, and the arrangement of the feed cups so that the bird cannot escape when the cups are removed.

Claim.—First, the combination of curved rest B, rim D, lip E, and hoop F, or their equivalents, operating together to secure a cage to its base.

Second, the arrangement described by which the feed cups are inserted without danger of the escape of the bird when removed.

No. 46,580.—Charles R. Otis, Yonkers, N. Y.—*Hoisting Apparatus.*—February 28, 1865.—The object of this invention is to provide for the temporary stoppage of a revolving drum, to which is attached a rope or chain, from which any load may be suspended, whenever from any cause the said drum revolves too rapidly. The invention consists in so applying a brake and centrifugal or other governor in combination with each other and with the aforesaid drum that while the revolution of the said drum does not exceed a certain velocity the brake will be kept out of operation by the governor, but that when such velocity is exceeded the governor will cause or permit the brake to come into operation, and so stop the revolution of the drum. A safety device is applied at or near the highest point in the hoisting apparatus, for the purpose of stopping the descent of the platform, in case of the breakage of the hoisting rope between the windlass or main drum and the pulley or drum at the top of the apparatus; in which case a safety device applied directly to the platform might fail to operate.

Claim.—First, the combination of a governor and brake with each other and with the drum of a hoisting machine, to operate substantially as herein specified under the circumstances herein set forth.

Second, combining the governor with the loaded lever of the brake by means of a lever r, or its equivalent, deriving motion from the governor, and acting as a support under a portion of the said loaded lever while the rotation of the governor does not exceed a certain velocity, but escaping from under the said loaded lever when such velocity is exceeded, substantially as and for the purpose herein described.

Third, applying a safety device at or near the highest point of a hoisting apparatus, to operate substantially as and for the purpose set forth.

No. 46,581.—George W. Palmer, Brooklyn, N. Y.—*Soda-water Cooler and Draught Pedestal.*—February 28, 1865.—This invention consists in making the case of a soda-water cooler with a door on one side for the admission of ice, and also in constructing a soda-water cooler with two iron plates combined with screw bolts, and having a suitable packing between the edges. The space between the plates is coated with vitrified enamel, and the soda-water passes through it to the draught pipe.

Claim.—First, the opening and door on the side of the refrigerator draught pedestal.

Second, the cooler, made substantially as set forth and for the purpose described.

Third, the coating or lining of soda-water coolers, as herein described.

No. 46,582.—Daniel H Paullins, Loudonville, Ohio.—*Steam Engine.*—February 28, 1865.—This invention consists in a movable interior cylinder, which is so constructed and sustains such relation with the ingress and egress ports and an external enclosing cylinder that said movable cylinder is adapted to operate as an induction and eduction valve. The interior cylinder is moved by the action of the piston head, which comes in contact with the end of it at each extremity of its stroke, by which means apertures are made to register with apertures formed in the induction pipe, or with a channel formed in the outer cylinder,

through which steam is admitted to and discharged from contact with the piston which moves in the interior cylinder.

Claim.—The movable cylinder E, provided with apertures *e e'* to permit the steam to enter and escape from said cylinder alternately at the respective ends thereof, when said cylinder is moved by the action of its own piston head, substantially as and for the purpose explained.

Second, in combination with the above, the arrangement of the chest G, inlet pipes G' G'', and grooved valve seats F F', when employed in connection with the movable cylinder E.

Third, in combination with the cylinder E, actuated by its own cylinder head as specified, the stationary external cylinder H and escape pipe H', employed in combination with the movable cylinder E, for the purpose of receiving and carrying off the steam after acting upon the piston as stated.

No. 46,583.—JOHN PENNYPACKER, Charlestown, Penn.—*Horse-rake.*—February 28, 1865.—This invention relates to certain devices whereby the teeth of the rake may be readily raised or lowered for the purpose of discharging the load at any desired spot. On the inside of each wheel is a ratchet wheel, and opposite to this ratchet wheel a cam plate is secured to the axle. Near each end is hung a lever, to the inner arm of which a spring plate is attached, the end of one plate lapping over the other, and having attached to it a second plate, which projects upwards through the axle. This plate being forced down causes the lever to engage with the ratchet wheel, thereby tilting the rake. A small lever is forced into a notch in the plate, passing through the axle, and holds the parts engaged. At a proper time the cams disengage the levers from the ratchets, and the rake falls to a working position.

Claim.—First, the cams *h*, constructed and arranged in respect to the levers G and ratchets I substantially as and for the purpose specified.

Second, the notched plate lever Q and plate *s*, in combination with the levers G, substantially as and for the purpose set forth.

No. 46,584.—HIRAM PENSYER, Centralia, Ill.—*Beehive.*—February 28, 1865.—The object of this invention is to secure the hive against the intrusion of moths. The construction of the hive will be understood from the claim and engraving.

Claim.—First, the dark chambers *m m* above the side entrances *e e* to the litter box below, in combination with the said litter box A, constructed with a sliding bottom *f*, all constructed and arranged as and for the purposes described.

Second, the main hive B, with its entrance *q* and dark chamber *r*, in connection with the litter box A, provided with entrances *e e* on each side of entrance *q*, and sliding bottom *f*, when constructed and arranged as and for the purposes described.

No. 46,585.—GEORGE R. PERCY, New York, N. Y.—*Manufacture of Glucose.*—February 28, 1865.—This invention consists in the manufacture of grape sugar from the whey of milk. The whey is put into a suitable vessel and a quantity of albumen added. It is then boiled and strained to separate the impurities; after which it is quickly evaporated and set aside, in order to allow crystals of lactine to be formed. The lactine is then dissolved and sulphuric acid added thereto, and boiled from one to four hours; after which the acid is neutralized with carbonate of potash, and the liquid is filtered through bone black and evaporated to a proper consistency.

Claim.—The obtaining of glucose or grape sugar from the whey of milk or from milk sugar.

No. 46,586.—FRANK P. PFLEGHAR and WILLIAM SHOLLHORN, New Haven, Conn.—*Tip for Oil Cup.*—February 28, 1865.—This invention consists in casting the tips of oil cans and their thumb rings in one piece and at one operation, coring out the interior the greater portion of the length of the tip, then drilling a hole nearly through a little smaller than the cored hole, and finishing with a small drill.

Claim.—As a new article of manufacture, the herein-described cast metal tip for oil cups.

No. 46,587.—T. K. REED, North Bridgewater, Mass.—*Bag Fastener.*—February 28, 1865.—Two jaws or gripers are hinged together and are made capable of interlocking at the other ends. These are applied to the mouth of a bag, which they fasten. A clasping jaw and locking device are combined with the gripers, so as to prevent their teeth from unclasping when once interlocked.

Claim.—A fastening device for bags having a construction substantially as specified.

No. 46,588.—JOHN RICH, Conway, Mass.—*Spinning Machine.*—February 28, 1865.—The friction feed and rolls delivering spools rise and fall with their frame to and from the twisting devices, the yarn of wool being intermittently griped and released between the roll and the wheel, and also by friction jaw fingers on the wheel. The twist is thus prevented rom running upon the thread while being drawn, so that the part below the fingers receives

its twist, while the roving above is being drawn preparatory to being run down to receive its twist.

Claim.—First, the combination in a tool-spinning frame or machine of the twisting spindle B, ring and traveller E, and a draw-twisting whirl F, with its holding fingers *c d*, substantially as and for the purposes herein described.

Second, the combination with the draw-twisting whirl and its holding fingers *c d* of the holding clamp T and feed roll Q, substantially as and for the purposes described.

Third, the combination with the feed roll of feed pulley R and spring feed arm Z, substantially as and for the purposes described.

Fourth, the combination of the dogs *y* and *z* with the incline on the long upright piece Y and sliding pin H, for the purpose of operating the feed arm Z, substantially in the manner herein described.

Fifth, the use and employment in wool-spinning machines of a friction pad acting intermittently on the pulley of the feed roller for delivering the roving, as and for the purposes set forth.

Sixth, the combination with the clamp T of the mechanism described for operating it at the proper time, substantially as set forth.

Seventh, the hinged dog *x* in combination with the incline on the short upright piece N, as and for the purpose set forth.

Eighth, the adjustable face 7 in combination with the upright piece *v* and hinged dog *x*, or the equivalent thereof, for the purpose stated.

Ninth, the draw-twisting whirl F in combination with the holding or retaining fingers *c d*, constructed and operating as and for the purposes herein described.

Tenth, the combination of mechanism constructed and arranged substantially as above described for drawing and twisting woollen threads simultaneously as herein set forth.

No. 46,589.—William Sage, Berlin, Conn.—*Rowlock.*—February 28, 1865.—This rowlock consists of a bearing plate combined with a chamber over the base of the rowlock. There is employed also a twin bolt placed on one end, or near one end, of the supporting plate.

Claim.—The plate C having a hub D turned up either with or without a screw, or corrugated surface formed thereon, in combination with the chamber in the base of a rowlock, substantially as described.

Second, the employment of a twin bolt E′, or its equivalent, in combination with the rowlock plate C, substantially as described.

No. 46,590.—J. B. Shaw, New Haven, Conn.—*Trace Lock.*—February 28, 1865.—This invention consists in making the hook upon the whiffletree double, one part of the hook being stationary and the other loose; the latter is turned back, while the other is passed through the trace, and then locked by turning down the loose part.

Claim.—The herein-described trace lock, constructed substantially as specified.

No. 46,591.—F. Smith and Peter Swope, Tiffin, Ohio.—*Wood-bending Machine.*—February 28, 1865; antedated January 27, 1865.—The object of this invention is to bend wood for wagon felloes, and it consists in a combination of devices for holding the wood to be bent in position, and an expansible block within the pattern which secures the pattern in the machine, and securing the wood on the pattern after being bent by hooks on the bending straps, and an adjustable clamp holder so made that it can be used for greater or less diameter of wheels.

Claim.—First, securing the patterns F in position to receive the strips *g* of wood as they are bent by means of expansible blocks G G, substantially as described.

Second, so applying the pattern holders G G to the frame of the machine that they can be elevated or depressed and held down firmly in place to receive the strip of wood as it is bent, substantially as described.

Third, the bending heads *c c* in combination with the strip *d* and detachable strip *d′*, when used in conjunction with a pattern F and expansible holders F G, substantially as described.

Fourth, the arrangement of the hooks *c e*, strip *d′*, and adjustable clamp *f f′*, in combination with the bending devices described and the movable pattern, substantially in the manner and for the purpose described.

No. 46,592.—William B. Snyder, Lakeville, Conn.—*Spring Balances.*—February 28, 1865.—A spring balance is provided with two sliding scales, one to indicate the weight of apron or basket, and the other its contents.

Claim.—The arrangement of the two sliding indices to weighing balances, in the manner and for the purpose substantially as herein set forth and described.

No. 46,593.—Daniel E. Somes, Washington, D. C.—*Cooling and Ventilating Vessels.*—February 28, 1865.—As the water of rivers and the sea at a short distance below the surface is always at a pretty low temperature, a system of pipes is arranged at any convenient

point on a ship's side in contact with the water, into which air is forced for the purpose of cooling it. Its temperature having been reduced in this way, it is conducted wherever it is required in the ship to cool and ventilate the various compartments.

Claim.—First, cooling and ventilating vessels in the manner herein described.

Second, cooling air for the purpose of cooling and ventilating vessels by forcing the air through submerged pipes or their equivalents, substantially as set forth and described.

Third, the forcing of air into ships and other vessels by the motion of such vessel in the water, or by the action of the waves against or around the vessel.

Fourth, affixing to the side of the ship or vessel a device or devices substantially as described, so that the motion of the vessel in the water, or of the water against the vessel, shall produce a blast of air, as described.

Fifth, the devices herein described, or their equivalents, for airing, cooling, and ventilating vessels for carrying grain or other perishable freight.

Sixth, constructing the interior of a vessel for carrying grain or other perishable freight, substantially as described, so that air may be conveyed through said vessel by means of perforated walls or tubes, as set forth, and this whether the air has been previously cooled or not.

No. 46,594.—Daniel E. Somes, Washington, D. C.—*Cooling and Condensing Apparatus used in Brewing and Distilling.*—February 28, 1865.—This apparatus consists in the employment of one or more subterranean tanks with reservoir pipes for cooling water for the purpose of cooling worts, beer, or other liquids. A suitable apparatus for condensing and cooling distillates is also employed in connection with the above. A pump propeller screw, or its equivalent, is used to cause a circulation of the water in the apparatus.

Claim.—First, the manufacture and use of coolers and condensers for use in brewing and distilling, constructed and operating substantially as herein set forth and described.

Second, a cooling apparatus for cooling worts, beer, and other similar liquids, composed of one or more subterranean tanks, reservoir pipes, or their equivalents, for cooling water, in combination with suitable apparatus for using the water thus cooled, for the purpose of cooling worts, beer, or similar liquids.

Third, the combination of a subterranean cooling apparatus for cooling water with suitable apparatus for condensing and cooling distillates, substantially as set forth and described.

Fourth, the combination of the subterranean cooling vessels, the apparatus for cooling and condensing liquids or distillates, with a pump propeller screw or other suitable means for causing a circulation of the water in apparatus constructed according to the principles of Fig. 2, as herein set forth and explained.

No. 46,595.—Daniel E. Somes, Washington, D. C.—*Cooling Preserving Houses, Packing Houses, Refrigerators, and other similar structures.*—February 28, 1865.—The nature and object of this invention are set forth in the claim.

Claim.—First, the process herein described for the purpose of cooling preserving houses, packing-houses, refrigerators, store-rooms, and similar structures, said processes consisting in using the low temperature of the earth at certain depths below its surface for the purpose of cooling either water or air or both by means of a combination of devices and apparatus substantially such as herein described, or their equivalents.

Second, the process herein described, or any equivalent means, for cooling water, in combination with the process for cooling air, by first compressing it in contact with a cold surface, and then permitting it to expand when used for the purpose of cooling and preserving, as herein set forth and described.

Third, cooling refrigerators and salting tanks in packing-houses and other similar structures by means of a current of cold water or cold brine, as set forth and described.

No. 46,596.—D. E. Somes, Washington, D. C.—*Mode of Cooling and Ventilating Dwellings, Churches, Hospitals, Theatres, and other Buildings.*—February 28, 1865.—This invention consists in equalizing the temperature of buildings to be occupied by men and animals by means of the cold earth always found at certain depths below the surface. The object of the device is to make the air in the buildings approximate at all seasons the mean annual temperature of the place. This is accomplished, first, by bringing a current of water in the pipes so as first to descend to the cold depths of the earth, and then pass through the buildings to a cooler, or through an adjoining refrigerating chamber; second, in making air pass in tubes through the cold earth, or through water which has been cooled by passing through cold earth. The air may be condensed while in the cooler and then permitted to expand so as to be further cooled. Evaporation also may be used to assist in cooling the air. In winter this system of cooling becomes a mode of warming, which may be aided by the usual means of heating.

Claim.—First, cooling and ventilating dwellings, churches, hospitals, theatres, and other buildings, substantially as herein set forth and described.

Second, the combination of a system of subterranean pipes, tanks, or reservoirs, with a corresponding system of pipes, channels, reservoirs, or their equivalents, in or near the building to be cooled, so as to cool and ventilate, substantially as described.

Third, cooling air by conducting it through or around water pipes, or compressing it in pipes, tanks, or reservoirs, in contact with any cooling medium, and then permitting it to expand so as to cool and ventilate buildings, substantially as described.

Fourth, cooling and equalizing the temperature of buildings by means of refrigerating chamber or chambers with water pipes, or their equivalents, for conveying a current of water, in combination with suitable devices and apparatus for cooling the water, all substantially as set forth.

Fifth, cooling buildings by means of pipes or other channels for water placed in the wall, between the two walls, or in the buildings to be cooled, and connected with a subterranean refrigerating apparatus, as set forth and described.

Sixth, combining with the devices herein described for equalizing the temperature of the earth below its surface, devices for heating or warming such water, so as in cold weather to warm buildings, constructed substantially as herein set forth and described.

Seventh, the construction of iron buildings with tubes, channels, or spaces in the walls, in combination with cooling and warming apparatus, constructed substantially as herein set forth and described.

No. 46,597.—ANSON P. STEPHENS, Brooklyn, N. Y.—*Percussion Grinder.*—February 28 1865.—This machine is in fact a quartz-crusher, and is so constructed that the upper and revolving stone moves upon inclines, and at a certain point it drops suddenly, producing the percussion. It combines the two elements of hammering and grinding.

Claim —The combination of the two grinders, one of which turns upon the other and is raised and permitted to fall at intervals so as to pound and grind the material alternately, substantially as set forth.

Also, the combination of the said two grinders with apertures in the lower grinder for the escape of fine material, substantially as set forth.

No. 46,598.—JOHN D. STEWART, Baltimore, Md.—*Smoking Pipe.*—February 28, 1865.—An ordinary pipe bowl of wood or metal has fitted to it a stem, in the middle of which is a trap or vertical chamber open at both top and bottom, the former being closed by a plug of wood or metal, and the latter by a bulb-shaped oil receptacle of any material which may be preferred; the stem that leads from the bowl enters the trap at a point considerably above the stem which connects with the mouth piece; the trap is cylindrical in shape.

Claim.—Giving such a shape to the stem B of a tobacco-pipe as to form a trap *d* in the smoke passage thereof for the purpose herein described.

Also, the openings to the aforesaid trap *d*, in connection with the movable devices for closing the same, substantially as described and for the purpose herein set forth.

No. 46,599.—WM. M. THORNTON, Clinton Junction, Wis.—*Lifting Jack.*—February 28, 1865.—The object of this invention is to so construct a lifting jack which is operated by means of a rack and segment, that all the lateral force which is applied to the lifting bar or jack staff shall be resisted by friction rollers instead of by a fixed friction surface, as hitherto; also to provide for shifting the position of a removable lever, by furnishing a constant support for the fulcrum of said lever during its vibration in the act of forcing the jack staff upward.

Claim.—First, the combination of the friction wheels *a a*, with the jack staff B, which is operated by means of a rack and segment, substantially as described.

Second, the application of friction wheels to the back edge of a jack staff, which has a rack formed on its opposite edge adapted to receive the toothed segment formed on the end of the removable lever C, substantially as described.

Third, the relative arrangement of the bearings *f f*, and friction wheels *a a*, on the standards of the jack staff which is operated substantially as described.

No. 46,600.—M. J. WELLMAN and J. J. GREENOUGH, New York, N. Y.—*Lamp Shade.*—February 28, 1865.—This invention consists in so constructing wire-gauze shades for lamps with scolloped edge as to form springs to hold the shade in place.

Claim.—The shade holder, constructed in the manner and for the purpose herein set forth.

No. 46,601.—GEORGE W. WILSON, Chelsea, Mass.—*Heating Furnace.*—February 28, 1865.—In this furnace are placed doors at either end of the fire chamber. Between this fire chamber and the outside of the wall are flues heated by radiation and openings, with a chamber over and smaller than the fire chamber; flues from the latter open into the former and the products of combustion circulate through this chamber to the exit pipe. From the space at the sides and the top between the outer wall and the inside arrangement above named, flues pass off to convey heat to any desired point; dampers at the side of the furnace and near the floor can admit air to temper the heat in this space; a small flue controlled by a damper admits air into the fire chamber at about the line of combustion.

Claim.—The combination and arrangement of the fireplace B, ash chamber C, radiator E, descending pipes *i i*, horizontal flues *h h*, ascending pipes *g g*, damper *f*, and escape flue *e*, the whole being arranged with respect to the air-heating chamber A, substantially as set forth.

Also, the combination of the air-receiving chamber I, and its vibratory valves *l l*, with the air-heating chamber A, and the fireplace provided with flues, substantially as described, for the escape of the volatile products of combustion.

Also, the arrangement of the air ducts G H H, with the air-receiving chamber I, the air-heating chamber A, the fireplace B, and ash chamber thereof.

No. 46,602.—BARNABAS WOOD, Albany, N. Y.—*Plugging Instrument for the Teeth.*—February 28, 1865.—This instrument being designed for heating a certain fusible filling for the teeth, consists of a bulb composed of some good conductor of heat, as silver, German silver, bronze, or other substance, to one side of which is attached a blade of similar material for communicating heat to and applying the fusible filling, and to the other side of which is attached a tubular handle of glass, porcelain, or other non-conductor of heat.

Claim.—First, the herein-described instrument, consisting of a metallic head, as described, affixed to a tubular shaft, whether of metal or other material, for an instrument for filling teeth, with the herein-mentioned fusible metal filling or other similar material.

Second, the construction of the head A, with a bulb, plate, and neck, as represented.

Third, the formation of the bulb *b*, between the blade *a* and the neck *c*.

Fourth, the combination of the head A and tubular shaft B or E.

Fifth, also the application of the insulating tubular casing D to the tubular shaft B.

No. 46,603.—WARREN N. ABBOTT, assignor to himself and D. B. RICH, Boston, Mass.—*Pipe Coupling.*—February 28, 1865.—This invention consists of a detachable screw coupling, in which the end of the pipe has a screw-nut provided with a flange slipped over it; there is also a washer fitted to the end of the pipe, and both pipe and washer are slightly enlarged by means of a conical plug; a nipple, having a conical end and a thread on the exterior, is screwed into the screw-nut, by which it is drawn tightly together, forming a joint without the use of solder.

Claim.—The within described detachable coupling, in which the end of the pipe is confined between the two portions B and C, in the manner substantially as described.

No. 46,604.—ELIZUR E. CLARK, assignor to F. N. CLARK, New Haven, Conn.—*Machine for Cutting Pasteboard for Boxes.*—February 28, 1865.—This invention consists in the employment of a zig-zag cutter roller, in combination with a feed roller.

Claim.—First, the zig-zag cutter, constructed and arranged in relation to the cutter holder, cutter stock, cutter bar, and main cylinder, so as to operate in the manner and for the purpose described, and whether the same is used in connection with scoring or ordinary cutters, substantially as set forth.

Second, the combination and arrangement for the adjustment and suspension of the upper feed roll B, substantially as set forth and described, and for the purpose specified.

No. 46,605.—HENRY HOWSON, assignor to STUART & PETERSON, Philadelphia, Penn.—*Gas-burning Stoves.*—February 28, 1865.—This invention consists in the arrangement of an annular plate around the casing of the stove just above the fire-pot, pierced with holes, and loosely fitted, so as to rise or fall by the expansion and contraction of heat, without binding; the casing of the stove being also pierced with corresponding holes, so that the annular plate acts as a register; the design of this device being to admit jets of air in upon the inflammable gases in the combustion chamber to supply oxygen to produce a more perfect combustion thereof. There is also in connection a damper with perforations in it, which serves as a door or cover to the opening of the ash-pit.

Claim.—First, an annular perforated plate E, arranged on or forming a part of a round or cylinder stove, at or near the upper end of the fireplace, in combination with an annular perforated plate or register F, when the latter, as well as the register, are so formed and adapted to each other that any difference in the expansion or contraction of the register and plate cannot impair the former or disturb its tendency to fit by its own weight on the plate E.

Second, an inclined plate E, formed by the annular indentation of the stove immediately above the fireplace, in combination with the annular perforated plate or register, as seen in Figs. 4 and 6.

Third, two circular and indented or bevelled surfaces, formed by contracting the body of the stove, in combination with two annular perforated plates, the one above and the other below the point contracted, as seen in Fig. 3.

Fourth, in combination with the ash-box, the bevelled damper I, with its perforations or notches, when the said damper is adapted to the bevelled opening of the ash-pit, and its notches or perforations, substantially as set forth, for the purpose specified.

No. 46,606.—M. KILLACKY, assignor to himself and J. G. ROUSE, Philadelphia, Penn.—*Horse Collar and Hames.*—February 28, 1865.—This invention consists in hames combined with and forming part of the collar; said hames being connected at the top by hinges, and at the bottom by a locking device.

Claim.—The hames A A′, combined with and forming part of the collar B B′, when the said hames are hinged together at the top and connected together at the bottom by the device herein described, or the equivalent to the same, for the purpose specified.

No. 46,607.—ANTONIO MEUCCI, Richmond, N. Y., assignor to W. E. RIDER, New York, N. Y.—*Mode of Making Wicks.*—February 28, 1865.—This invention consists of a lamp-wick made of paper pulp, and strengthened by means of bobinet or other similar material.

Claim.—The new manufacture of wick and wicking of decomposed vegetable fibre, substantially as herein set forth.

No. 46,608.—E. L. SIMPSON, Bridgeport, Conn., assignor to SIMON STEVENS, New York, N. Y.—*Mode of Preparing India-rubber for the Manufacture of Hose, Belting, Packing, &c.*—February 28, 1865.—A compound of boiled oil and sulphur, in the proportion of a quart of the former to a pound of the latter, is heated till it becomes spongy. This substance, combined with India-rubber, or other similar gum, and subjected to a sufficient regulated heat from steam, acquires those properties required in hose, belting, packing, &c.

Claim.—Preparing India-rubber for mechanical purposes in the manner substantially as herein set forth.

No. 46,609.—E. L. SIMPSON, Bridgeport, Conn., assignor to SIMON STEVENS, New York, N. Y.—*Manufacture of Hard Rubber.*—February 28, 1865.—A certain compound of boiled oil and sulphur, heated to sponginess, is combined with India-rubber in the proportion of two ounces of the former to one pound of the latter, by passing both substances together between warm rolls, and subjecting the resulting compound to steam at 320° Fahrenheit for the space of five hours, more or less. Having cooled, it forms hard rubber.

Claim.—The compound produced by combining the within described vulcanizing compound with India-rubber, and the said compound cured in the manner and for the purpose herein set forth.

No. 46,610.—E. L. SIMPSON, Bridgeport, Conn., assignor to SIMON STEVENS, New York, N. Y.—*Process of Manufacturing India-rubber, &c.*—February 28, 1865.—A preparation of boiled oil and sulphur, heated to sponginess, is mixed with India-rubber, or other similar gum, and with some oxide or carbonate of lead, and any desired coloring matter. This mixture having been subjected to a sufficient degree of regulated heat is rid entirely of the disagreeable odor and deleterious properties of vulcanized rubber.

Claim.—First, the within described compound of vegetable oil and sulphur, prepared substantially as and for the purposes specified.

Second, the manufacture or preparation produced by combining the within described compound with India-rubber, gutta-percha, or other similar gum or gums, substantially as and for the purposes specified.

No. 46,611.—E. L. SIMPSON, Bridgeport, Conn., assignor to SIMON STEVENS, New York, N. Y.—*Water-proof Fabric.*—February 28, 1865.—Upon silk, light or heavy cotton, Canton flannel fabrics, &c., are spread one or more coatings of a certain compound of boiled oil, sulphur, rubber, &c., and, while it is in an adhesive state, flocks or other similar material are sifted over it in excess. The fabric thus coated is passed between pressing rollers. The excess of flocks is then removed by means of a revolving brush. The fabric is then subjected, for twelve hours, more or less, to a temperature of 270° Fahrenheit, or thereabout. It is then ready for use.

Claim.—As a new article of manufacture, coating water-proof fabrics with flocks, when the fabric is first prepared in the manner herein set forth.

No. 46,612.—CHARLES E. SNEIDER, assignor to himself and THOMAS POULTNEY, Baltimore, Md.—*Revolving Fire-arm.*—February 28, 1865.—A small percussion rod passes through the nipple or breech of each of the chambers of the revolving cylinder in the line of the axis thereof, having a slight longitudinal play, and provided with a knot or enlargement at each end. The said percussion rod serves to transmit the blow of the hammer to the central priming of the cartridge, and also to start the cartridge shell forward from its chamber after it has been discharged.

Claim.—First, the pins D passing through the rear part of the cylinder, and provided at their forward ends with heads *d'*, adapted to act as gas checks in the event of gas escaping from the rear of the cartridge.

Second, in combination with the aforesaid pins D, the described construction and relative arrangement of the rear end of the cylinder and the hammer, whereby the pins D, after having been employed for the explosion of the cartridges, are made capable of an additional forward movement to effect the ejection of the exploded shells, as explained.

No. 46,613.—D. H. SOUTHWORTH, New York, N. Y., assignor to himself, BLASE LORILLARD, and CHARLES FARRIS, White Plains, N. Y.—*Telegraph Cable.*—February 28, 1865.—This invention consists in a method of insulating the wires of a cable by means of a piece of gutta-percha, having pins or projections, the several wires being placed in the angles formed by wings and the main body of the gutta-percha piece, and there being enclosed by projections by means of suitable machinery.

Claim.—Enclosing and separately insulating several telegraph wires or conductors in a cable by means of an insulating piece, having pins or flanges, and otherwise constructed, substantially as herein specified.

No. 46,614.—WING H. TABER, assignor to himself and THOMAS H. ABBOTT, Lowell, Mass.—*Bench Plane.*—February 28, 1865.—This invention consists of an adjustable fulcrum screw or bed inserted in the plane stock, and on which the plane irons rest. On the top of the plane irons is a V-shaped lever, through one end of which lever, and through the plane irons, passes a screw into the stock. Through the other end of said lever a screw also passes, the end of which rests on the plane irons, thus holding the irons in the throat of the plane stock.

Claim.—The combination of the adjustable bed or bearing G, the screws F and D, and the lever E, the whole being arranged with respect to the plane iron and the stock, substantially as specified.

Also, the arrangement of the adjustable bed G with the fulcrum screw D, the lever E, the screw F, the plane iron B, and its bearing *b*, arranged at the lower part of the throat *a*, as described.

No. 46,615.—GEORGE W. BROWN, Galesburg, Ill.—*Seed-planting Machine.*—February 28, 1865.—In this invention the driver's seat moves upon rollers, and is reversible. V-shaped scrapers are operated independently by treadles. A horizontal seed wheel is revolved continuously, both automatically and by a hand lever, by means of a fork so arranged that its forward and backward motions both turn the wheel by increments in the same direction. Both the seed bar and the frame of the machine are adjustable by metal sockets, in order to increase or lessen the distance between the rows.

Claim.—First, in combination with a seed-planting machine, having its seeding devices forward of the centre of the wheels, a movable seat F with wheels *f* and *f*2 and guides *a* and *a'*, for the purpose described.

Second, in combination with the operative parts of a seed-planting machine, the metal sockets A, constructed as shown, and arranged for use in combination with the side frames A1 A2, for the purpose of widening and narrowing the machine, in the manner and for the purpose specified herein.

Third, the employment of a corresponding metal socket H and adjustable side parts H1 H2 in combination with the frame A A1 A2, or its equivalent, so that the seed bar shall be shortened and lengthened to correspond with the changes in width of the frame, substantially as herein specified.

Fourth, in a continuously progressing seed-planting machine, wherein the seed-dropping mechanism is operated by an attendant, in contradistinction to automatic dropping, the operating of horizontal seed wheels by hand, so as to make complete revolutions by increments, substantially in the manner and for the purposes herein set forth.

Fifth, in a seed-planting machine the employment of seed-dropping wheel and operating fork, combined and arranged as herein represented and described, so that the movement of the fork in one direction will act on the wheel to turn it to a certain extent in a certain direction, and the movement of the fork in the opposite direction will act on the wheel to turn it to a certain extent in the same direction as before, thus turning the wheel by increments around in one uniform direction by reciprocating movements of the fork, as herein set forth.

Sixth, in such machine holding the drill mechanism at rest by carrying the inclines *u* beyond the range of the pins T, substantially in the manner and for the purpose herein set forth.

Seventh, in combination with a seed-planting machine, carried on wheels, the employment of two independently-operated scrapers X X2, which are severally forced against and released from the supporting wheels at the will of the operator by means of treadles Y1 Y2, connected and arranged to operate substantially as and for the purpose herein set forth.

No. 46,616.—RUEL ALDEN, East Toledo, Ohio.—*Protecting Trees from Injury while Ploughing.*—March 7, 1865.—This invention consists in providing the outer ends of whiffletrees with elastic rollers, which guide the ends of the whiffletree past the trees without contact, and thus preventing injury to the bark.

Claim.—The employment or use of India-rubber or other elastic substance in the form of rollers or otherwise, applied to one or both ends of a whiffletree, to serve as a cushion or guard to protect, while ploughing, trees from the action of the whiffletrees, substantially as set forth.

No. 46,617.—ETHAN ALLEN, Worcester, Mass.—*Cartridge Retractor for Breech-loading Fire-arms.*—March 7, 1865.—This invention consists in so arranging a link, in connection with the cartridge discharger and the frame of the pistol, that by turning the barrel from its bed it acts upon the discharger and throws the exploded cartridge shell from the barrel.

Claim.—A link F, hung in front of the centre of action of barrel B, in combination with discharger E, substantially as described.

No. 46,618.—WILLIAM ATWOOD, Cape Elizabeth, Me.—*Apparatus for Oxidizing Metals.*—March 7, 1865.—This invention consists of a revolving chamber provided with flanges, and open at the end, and communicating with a flue. Said flue communicates with chambers, one of which communicates also with the chimney. The material to be treated is placed in the first-named chamber, which is heated by means of a fire in the furnace. A draught of

air is caused to flow through the said chamber into the flue and the other chamber, and from thence into the chimney. The particles of materials carried over by the draught are caught in the chambers.

Claim.—The invention of a revolving chamber, so constructed as to admit the passage of a constant current of atmospheric air over and through the material to be oxidized while the same is kept in constant motion and exposed to any desirable degree of heat.

No. 46,619.—JAMES C. AYER, Lowell, Mass.—*Process for Desulphurizing and Disintegrating Ores.*—March 7, 1865; antedated January 24, 1865.—This invention consists in subjecting the ore to a high degree of heat, and then suddenly cooling with it an alkaline solution. The ore is then again heated and cooled, and if not sufficiently disintegrated, the operation may be repeated, and so on until the desired effect is obtained.

Claim.—First, the application of treating rock or ores while in the heated state with an alkaline solution, substantially as described, for the purpose of partial disintegration, desulphurization, and oxidation of the same.

Second, the application of re-treating ores which have been heated, substantially as above described, and the same repeated for the complete disintegration, desulphurization, and oxidation of the same.

No. 46,620.—JAMES C. AYER, Lowell, Mass.—*Process for Desulphurizing and Disintegrating Ores.*—March 7, 1865; antedated January 24, 1865.—This invention consists in heating the ore to a high degree of heat and cooling it suddenly with a solution of salt and water. The operation is then repeated, and if the ore is not sufficiently disintegrated, may be repeated until the desired effect is obtained.

Claim.—First, the application of treating rock or ores while in the heated state with a saline solution. substantially as described, for the purpose of partial disintegration, desulphurization, and oxidation of the same.

Second, the application of re-treating ores which have been heated, substantially as above described, and the same repeated, for the complete disintegration, desulphurization, and oxidation of the same.

No. 46,621.—JAMES C. AYER, Lowell, Mass.—*Process for Disintegrating, Desulphurizing, and Oxidizing Ores.*—March 7, 1865; antedated January 24, 1865.—This invention consists in subjecting the ore to a high degree of heat, and while in that condition suddenly cooling it by means of jets of water. When the ore has cooled it is again heated, which further disintegrates it. When heated to a proper point it may again be cooled with water. The above operation may be repeated as often as necessary.

Claim.—First, the application of cooling ore, while in a heated state, with water, substantially as described, for the purposes of partial disintegration, desulphurization, and oxidation of the base metal in the same.

Second, re-treating ores which have been treated substantially as above described and repeating the same for the complete disintegration, desulphurization, and oxidation of the metals in the same.

No. 46,622.—SAMUEL BABBIT, Kokomo, Ind.—*Gaiter Boots.*—March 7, 1865.—This invention consists in dispensing with the use of the ordinary gore or elastic webbing in the manufacture of gaiter boots, and forming that part of the shoe which covers the ankle with an extension, which enlarges the opening to such a degree as to permit the foot to be readily inserted, and which, after the shoe is on the foot, is folded or buckled and fastened against the ankle after the manner of a flap.

Claim.—A gaiter boot constructed with a folding extension C, substantially as and for the purposes set forth.

No. 46,623.—WILLIAM E. BARTON, East Hampton, Conn.—*Attaching Sleigh Bells to Straps.*—March 7, 1865.—This invention is intended to effect the stringing of sleigh bells by attaching them to straps by means of metallic fastenings, capable of being readily taken apart to remove the bells for cleaning or to replace broken parts; also to hold the bell out of contact with the strap.

Claim.—First, the metallic seat, having a recess conforming to the boss of the bell, a hole for the coupling screw to pass, and impinging surfaces on the leather side to keep the seat in place, substantially as described.

Second, in combination, the bell with short boss and screw hole, the metallic seat strap, and coupling screw, substantially as described.

Third, in combination, the coupling screw, flaring washer strap, metallic seat, and bell, substantially as described.

No. 46,624.—J. A. BASSETT and E. L. NORFOLK, Salem, Mass.—*System of Supporting Combustion.*—March 7, 1865.—This invention consists of a furnace provided with a steam boiler. The products of combustion pass through jackets into the flue. A series of pipes communicates at one end with the said boiler, the other end passing out below the fire-box.

Tubes are provided through which super-heated steam passes into the space beneath the fire-box, the air entering through a tube *d* around the sides of a tube *c*.

Claim.—Supporting or effecting combustion in furnaces, stoves, &c., by the introduction of super-heated steam, with or without air, substantially as herein described.

No. 46,625.—BENJAMIN F. BATES and CHARLES R. MACY, New York, N. Y.—*Ordnance and Projectile.*—March 7, 1865.—This invention consists of a sub-calibre projectile, provided with a long stem, or narrow shaft, extending from its rear, and passing through an orifice in the breech of the gun. A washer or sabot of the full calibre of the gun is slipped over the stem or shaft, and resting against the base of the projectile, properly centres it, and receives the propelling force of the charge. The gun is provided with a suitable stuffing box at its rear, to prevent the escape of gas around the projectile.

Claim.—First, a projectile, made with a small head B, a smaller body C, to pass through an aperture in the breech of the gun, and a disk D to fit the bore of the gun, substantially as herein described.

Second, a gun, having guide blocks G G′ applied to its breech in the manner described, and employed in connection with a projectile formed with a longitudinal rear extension C, either for the purpose of guiding the latter in a central position, or imparting rotation to the projectile, as herein set forth.

No. 46,626.—WILLIAM N. BATES, Centre Point, Iowa.—*Seeding Machine.*—March 7, 1865.—In this invention a tooth reciprocating agitator is moved in a mitred seed box, by connecting it with a vibrating block and link from a wrist on the driving wheel.

Claim.—The combination and arrangement of parts herein described, consisting of a mitred seed box with a regulating slide C, with its spring inside of the seed box, a gate I, operated by a handle from the exterior, and a toothed reciprocating agitator F, moving on bearings at the upper part of the seed box, with its teeth extending down nearly to the seed aperture, and operated by connection with a vibrating block and a link from a wrist on the driving wheel.

No. 46,627.—EDWIN P. BAUGH, Philadelphia, Penn.—*Bone Mill.*—March 7, 1865.—This invention consists in the peculiar construction and dress of the grinding surfaces, and the made of securing the several sections. Reference to the claim and engraving will define it clearly.

Claim.—First, making the grinding surface of mills for grinding bone and other substances, when the same are of cast metal, in sections or divisions, so that the outer grinding surface shall be composed of vertical sections *b*, surmounted and held in place by a ring *c*, whose periphery is also a grinding surface, substantially as above described.

Second, making the ring L, which serves as a foundation for the lower edges of the grinding surface, separate and distinct from the shell A which surmounts the said outer grinding surface, substantially as above described.

No. 46,628.—A. BELCHAMBER, Ripley, Ohio.—*Harvesting Machine.*—March 7, 1865.—This invention relates to the construction of the flange, to which the rake bars and reel arms are secured. This flange is furnished with sockets, in which the rake bars are firmly secured, while those in which the reel arms are secured are made open, thus allowing the said arms to be pivoted to the flange, so as to rise and fall independently of its motion. The flange is secured to a rotating shaft by a rod which passes through said shaft, while its ends are fitted in bearings which are attached to the flange.

Claim.—The flange I, attached to a rod H at the upper end of the rotating shaft D, and provided with sockets in which the rake bars J are permanently secured, and the reel arms J′ secured by pivots or pins *g* in connection with the camway M, all arranged to operate substantially as and for the purpose herein set forth.

No. 46,629.—GEORGE I. BERGEN, Galesburg, Ill.—*Corn Planters.*—March 7, 1865.—This invention consists in making the runners concave in front and slightly descending in the rear, to carry under and cut the stalks. A guide is placed upon either hopper for properly planting the rows. An adjustable rubber cut-off is used in the hopper, of the same size as the seed hole. The seed slide is operated by direct motion of a sliding rod without levers. The seed tube is cast in two parts, which are pivoted together. The hopper is slanting, and may be elevated by a leg above the seed slide.

Claim.—First, the runner D, having a concave edge along its front part, and a slightly descending straight edge from *a′* to *a″*, as shown and described.

Second, uniting the front and rear frames of a corn planter by means of the curved slotted box *f* and bar *g*, in combination with the loose joint *d e*.

Third, a guide for planting, consisting either of two points or a broad plane surface, substantially as set forth.

Fourth, the hopper C, when constructed as herein set forth.

Fifth, the plate *k*, when constructed and used as and for the purposes described.

Sixth, the scrapers H, constructed as described and mounted on the roller I in such a

manner as to automatically remove themselves from contact with the wheels, as and for the purpose set forth.

Seventh, the seed tube E, when constructed as shown and described.

Eighth, the rubber cut-off *j*, when constructed and operated as herein set forth.

Ninth, the sliding rod K, having the bent arms *t*, and operating in conjunction with the standards *t* and seed slides *o*, as and for the purpose set forth.

Tenth, pivoting the valve *m'* on the removable pin *q*, and having the stem of said valve resting loosely in a notch *o* in the edge of the seed slide outside of the hopper, all arranged and operating as herein described.

No. 46,630.—H. W. Bill, Cuyahoga Falls, Ohio.—*Reaping Machine.*—March 7, 1865.—This invention consists in discharging the grain by means of an elevating and rotating frame, which is operated by a spring pawl arranged on the shaft of said frame, and connected with a hand lever, placed within convenient reach of the attendant.

Claim.—First, removing the grain from the machine and depositing it upon the ground in gavels, by means of the frame F, raised and rotated by one continuous operation substantially as set forth.

Second, the guards H, in connection with the frame F, as and for the purpose set forth.

Third, the bearers *c c*, in connection with the frame F, as and for the purpose set forth.

Fourth, rotating the frame F, by means of the pawl *e* and spring *s*, in combination with the shaft *b* and catches *c c*, substantially as and for the purpose set forth.

No. 46,631.—John Binney, Boston, Mass.—*Street Lamps, Lanterns, &c.*—March 7, 1865.—This invention consists in certain devices operating as shields, to protect the light from currents of wind in street lamps, lanterns, &c.

Claim.—First, the construction and arrangement of street lamps or lanterns, or other lamps exposed to winds or currents of air, substantially as herein described.

Second, a lantern or street-lamp cap, composed of a chimney provided with apertures and overhanging bands, in combination with an annular shield, the whole being constructed for operation in the manner and for the purpose set forth.

No. 46,632.—H. Bolthoff, Buddington, Iowa.—*Apparatus for Amalgamating Gold and Silver.*—March 7, 1865.—This invention consists of a pan, made with a central conical hub, through which a hollow shaft passes. On the lower part of a spindle which passes through a hollow shaft is keyed a bevel wheel, and on the lower part of the said shaft is also keyed a similar bevel wheel, and into these wheels bevelled pinions gear, by means of which the mullers are rotated in opposite directions. On the upper part of the hollow shaft a square is formed, which is above the conical hub, and on this square is fitted the square portion of a conical hub, which extends down over the hub and is connected with the muller, which is provided on its under face with shoes. A sleeve provided with a slot is fitted over the upper end of the spindle, and a pin passes through said slot and spindle. This pin and openings cause the spindle to rotate the sleeve, while the openings allow the said sleeve to be adjusted by means of a screw.

Claim.—First, the employment or use of the two mullers O K, placed one above the other in the pan B, and arranged in such a manner as to rotate in reverse or opposite directions, substantially as and for the purpose herein set forth.

Second, the arrangement and combination of the central-fixed conical hub C, at the centre of the fan B, spindle E, tubular shaft D, conical hub J' of muller K, and the hollow hub Q of muller O, provided with arms R, fitted on the sleeve M, which is placed on the upper part of the spindle E, with the screw N fitted in it, substantially as and for the purpose described.

No. 46,633.—Edward Braggins, Titusville, Penn.—*Apparatus for Distilling Petroleum.*—March 7, 1865.—This invention consists of a retort surrounded with a steam jacket, to which is attached a condenser, surrounded by a water jacket. An air-pump is attached to said condenser, for the purpose of withdrawing the air from it. A water tank is connected with the condenser, and the water jacket by means of pipes.

Claim.—The method described of producing a vacuum in the condenser *k* by water, in the manner described, when done by the aforesaid combination for the purposes set forth.

Also, the combination of the water tank P with the tubes O and N, the condenser *k*, the tube R, and the retort A, with the tubes E F C, when the same are constructed as described and in the aforesaid combination, for the purposes set forth.

No. 46,634.—Martin Briggs, Rochester, N. Y.—*Safe.*—March 7, 1865.—This improvement consists in placing the lock within a recess formed in the door back from its inner surface, and with the outer plate of the lock exposed, so as to be readily removed whenever desired, and also in a chamber to accommodate the movement of a bar, to which the bolts are attached, formed within the inner flange of the door, and rendered accessible by a hinged plate, or otherwise. By this arrangement the fire-proof material covers one face and three sides of the lock-case; the other face and side alone being exposed.

Claim.—The construction essentially as herein shown, the lock C being secured within the inner side or back of the door, with its back resting through in such a manner as to be readily opened and used in combination with the plates A B and packing D, so that the packing will surround the lock on the outside and ends to protect it, substantially as set forth.

Also, in combination with lock C, plates A B, and packing D, as above described, arranging the bar H and its bolts *g g*, in the inner flange of the door, and rendering them accessible by the chamber *i*, substantially as herein set forth.

No. 46,635.—JOHN BOUGHTON, New York, N. Y.—*Oil Can.*—March 7, 1865.—This improvement consists in placing between the chambers of an oil can and its nozzle a transparent chamber, so that the operator can see the oil rising, and prevent overflow in filling.

Claim.—An oil can or oiler having a transparent chamber applied to or combined with its metallic or opaque body and nozzle, to operate substantially as and for the purpose specified.

No. 46,636.—WILLIAM BUDD and J. L. HUSBAND, Philadelphia, Penn.—*Composition for Lining Oil Barrels.*—March 7, 1865.—This invention consists of drying japan, boiled linseed oil, and roofing cement.

Claim.—The manufacture of the firm elastic, impervious, coating, and the use of the same as herein before substantially set forth.

No. 46,637.—W. E. CHESNEY, Abington, Ill.—*Corn-planter.*—March 7, 1865.—This invention consists in devices for raising the runners, to which the said boxes are attached. The devices are not new in themselves, and the novelty consists in their arrangement and combination.

Claim.—The cams L L and lever M, in combination with the bar K, seed-boxes F F, and springs *j j*, all arranged to operate as herein set forth.

No. 46,638.—M. R. CLAPP, New York, N. Y.—*Pump.*—March 7, 1865.—Concentric in a cylinder is a much shorter and smaller cylinder, in which the piston moves. The space between the two is enclosed by a flange, extending from the ends of the inner to the outer cylinder. External valves in these flange disks are held in place by coiled springs. The piston rod moves horizontally, through one of the large cylinder heads. The water is drawn in between the cylinders to a port beneath. Each thrust of the piston forces the water before it through an opening in the outer cylinder, and the end of the inner cylinder into a valve-box above, and thence through hose and pipe; the vacuum behind the piston causing the valves at that end of the small cylinder to open. The object is to secure a large influx of water when operating the pump as a fire-engine.

Claim.—Inducting the water into the main cylinder B, through openings $f' f^2$, which surround, or nearly surround, the cylinder at each end, controlled by valves $G' G^2$, as specified, and delivering the water through valves or sets of valves $M' M^2$, the several parts being arranged and adapted for joint operations and easy access, substantially as set forth.

No. 46,639.—JAMES J. CLARK, New York, N. Y.—*Receiving Magnet for Telegraphs.*—March 7, 1865.—This invention consists in the substitution for cutters of the stop screws of a revolving wheel, having a roughened edge, by which a loud sound is produced by a very slight motion of the lever of the relay or receiving magnet.

Claim.—The revolving wheel A, with roughened edge, in combination with a telegraph receiving or main magnet, applied in the manner and for the purpose as herein before specified.

No. 46,640.—MOSES M. CLARK, Monroe, N. Y.—*Can for Preserving and Transporting Milk.*—March 7, 1865.—This invention consists in making cans, such as are used by milkmen for carrying milk to market, with double walls, and a filling of pulverized charcoal between the said walls.

Claim.—The filling in of milk cans between the inner and outer covers with pulverized charcoal, as a means of preserving milk, in such manner as to protect the milk from heat.

No. 46,641.—N. D. CLARK, Bentonsport, Iowa.—*Gold Washer.*—March 7, 1865; antedated March 3, 1865.—In this machine the pan which receives the dirt to be washed has its bottom filled with perforations punched in opposite directions, so as to leave the "burrs" equally above and below. Fastened to the under side of this pan is a collecting bottom, which receives all substances that pass through the perforations in the pan, and delivers the same at the orifice shown at *d*, where they fall into the next pan, which has cross-curved partitions. In one or more divisions of the pan the mercury is placed, where it is agitated. Both the pans are suspended, so as to be vibrated. The force for vibrating them may be taken from the shaft of the water wheel, the waste-water of which flows over the pan.

Claim.—First, the providing of a separator for the above described purpose, with a series of elastic slips attached to the open end, to serve in separating nuggets from among the stones.

Second, the providing of a separator as above with a second bottom, made hollowing or inclined from the sides inward to some point where there is an opening downwards, to serve in collecting and discharging the dirt at one place.

Third, the providing of the above described separator and gold-pan with sifting or oscillating motion.

Fourth, the double use of the water, first as a propelling force, and then to wash the dirt.

No. 46,642.—J. M. COLLINS, New Bedford, Mass.—*Car Brake.*—March 7, 1865.—This invention relates to a method of attaching the shoes of the brake-heads, and also in attaching the brake-bar to the heads, whereby the shoes are firmly secured to the heads, and at the same time rendered capable of being readily detached, to be replaced by new ones when required, and the brake-bar and fixtures attached to it rendered more durable than those at present constructed.

Claim.—First, the mode of securing the shoes D D to the heads B B, by means of the dovetail projections *c* on the shoes fitted in the dovetail grooves *b* in the heads, when combined with the dovetail plugs E, and the bolts *e*, provided with the dovetail heads *f*, all arranged as set forth.

Second, the cast-iron shoe bar A, when attached or fitted to the heads B B, when constructed in the manner substantially as herein shown and described.

No. 46,643.—EDWARD COYLE, Albany, N. Y.—*Padlock.*—March 7, 1865.—This invention consists in providing a padlock with a series of tumblers having hooks at each side of them, and arranged in such relation with the eye of the shackle that each tumbler, in unlocking the lock, will require to be moved in a certain position relatively to the eye in order to release the shackle, a slight deviation from this position rendering it impossible to withdraw the shackle.

Claim.—The combination of the spring E, with the shackle B, plurality of double-hooked tumblers C, and springs *d*, all constructed, arranged, and operating as and for the purposes specified.

No. 46,644.—C. O. CROSBY, New York N. Y.—*Machine for Making Fish-hooks.*—March 7, 1865.—This invention consists mainly in the combination and arrangement of the several devices for fabricating a fish-hook, in the order in which the different operations are to take place. Thus the first is a device for feeding the wire to the cutter, which latter cuts off a blank; then comes a carrier of peculiar construction and operation, which carries the blank intermittingly and successively to devices which form the head, bend the point, cut the barb, point the hook, and finally bend it to the proper shape.

Claim.—First, the combination of an intermittent feeding device with a cutter L, or its equivalent, when both are constructed substantially as herein set forth.

Second, the combination of a carrier, constructed and operating as described, producing intermittingly a progressive translating movement of the blank with a cutter L and header B4, or their equivalents, substantially as described.

Third, the combination of a carrier constructed and operating as described, producing intermittingly a progressive translating movement of the blank with header B4, and barb cutting instrument P2, or their equivalents, substantially as described.

Fourth, the presser 13, when formed so as to press upon the blank forward to the barb, to bend the blank over the bed P1, on which it rests, and to prevent the barb from curling over, substantially as set forth.

Fifth, the combination of the holder 14, back of the barb cutting instrument, with the presser 13, forward of the barb cutting instrument, substantially as and for the purpose specified.

Sixth, the combination of the holder 14, back of the barb cutting instrument, and the presser 13, forward of the barb cutting instrument, with the block or bed P1 on which the blank rests, substantially as and for the purpose set forth.

Seventh, the combination of the holder 14 back of the barb cutting instrument, the presser 13 forward of the barb cutting instrument, and the bed P1 on which the blank rests, with the barb cutting instrument P2, substantially as described.

Eighth, the combination of a carrier constructed and operating as described, producing intermittingly a progressive translatory movement of the blank, with barb cutting instrument P2 and one or more pair of pressing or clipping dies, substantially as specified.

Ninth, the combination of a carrier constructed and operating as described, producing intermittingly a progressive translatory movement of the blank. with one or more pair of pressing or clipping dies, barb cutting instrument, cutter L, or its equivalent, and intermittent feeding device, substantially as described.

Tenth, the combination of a carrier constructed and operating as described, producing intermittingly a progressive transitory movement of the blank, with one or more pair of pressing or clipping dies, barb cutting instrument P2, and header B4, or their equivalents, substantially as specified.

Eleventh, the combination of a carrier constructed and operating as described, producing intermittingly a progressive translatory movement of the blank, with one or more milling devices, substantially as set forth.

Twelfth, the combination of a carrier constructed and operating as described, producing intermittingly a progressive translatory movement of the blank, with two or more pair of pressing or clipping dies, substantially as specified.

Thirteenth, the combination of a carrier constructed and operating as described, producing intermittingly a progressive translatory movement of the blank, with two or more milling devices S, substantially as described.

Fourteenth, the combination of a carrier constructed and operating as described, producing intermittingly a progressive translatory movement of the blank, with a barb cutting instrument and one or more milling devices, substantially as set forth.

Fifteenth, the combination of a carrier constructed and operating as described, producing intermittingly a progressive translatory movement of the blank, with a header, barb cutting instrument, and one or more milling devices, substantially as described.

Sixteenth, the combination of a carrier constructed and operating as described, producing intermittingly a progressive translatory movement of the blank, with a bender or former T2, substantially as described.

Seventeenth, the combination of a carrier constructed as described, producing intermittingly a progressive translatory movement of the blank, with one or more milling devices and a former or bender T2, substantially as specified.

Eighteenth, the combination of a carrier constructed as described, producing intermittingly a progressive translatory movement of the blank, with a barb cutting instrument, and bender or former T2, substantially as specified.

Nineteenth, the combination of a carrier constructed and operating as described, producing intermittingly a progressive translatory movement of the blank, with a header B4 and barb cutting instrument, substantially as described.

Twentieth, the combination of a carrier constructed and operating as described, producing intermittingly a progressive translatory movement of the blank, with a bender T2 and cutting device L, substantially as described.

Twenty-first, the combination of a carrier constructed and operating as described, producing intermittingly a progressive translatory movement, with a grooved guide 15, substantially as and for the purpose specified.

Twenty-second, the combination of a carrier constructed and operating as described, producing intermittingly a progressive translatory movement of the blank, with a holder c', which grasps and securely holds the blanks during their movement from one instrument to another, substantially as set forth.

Twenty-third, the combination of a carrier constructed and operating as described, producing intermittingly a progressive translatory movement of the blank and holder c', which grasps and securely holds the blanks during their movement from one instrument to another, with a bender T2, substantially as described.

Twenty-fourth, the combination in one machine of an intermittent feeding device, cutter L, a carrier constructed and operating as described, header B4, barb cutter P2, pointing devices and bender T2, or other equivalents, in the manner and for the purpose substantially as herein set forth.

Twenty-fifth, the adjusting guide P3 for regulating the depth of the cut, in combination with the barb cutting instrument P, substantially as described.

No. 46,645.—M. B. Dodge, New York, N. Y.—*Apparatus for Gathering Quicksilver.*—March 7, 1865.—This invention consists of a vat, containing a bottom of copper or other metal, which can be amalgamated. The vat is provided with a series of slats, so arranged that they can be removed when desirable. Between each slat and the bottom a space is left, the spaces between said slats and bottom being occupied by an agitator.

Claim.—The slats D inserted into the vat A, so as to have channels *a* between their lower edges and the bottom of the vat, in combination with an amalgamated bottom B, and with or without an agitator E, constructed and operating substantially as and for the purposes set forth.

Also, imparting to the vat A and to the agitator E a reciprocating motion in opposite directions, as and for the purposes specified.

No. 46,646.—Nicholas Downes, Syracuse, N. Y.—*Water Filters.*—March 7, 1865.—A vessel of suitable size being provided, an ice dish and a pure water reservoir are arranged to occupy the upper portion thereof, each of these vessels being a semicylinder, and each having a perforated bottom, but the reservoir being deeper than the ice dish. At the bottom of the vessel a semicylindrical channel extends across the bottom, having minute perforations along its sides. A partition between the wo vessels at the top descends to this channel at the bottom. All the space below the two vessels at the top, and a narrow space between them and the outer vessel are packed with filtering material. Ice being put into the ice dish, and water poured thereon, the water percolates to the bottom of the outer vessel, and ascends into the reservoir above, where it may be drawn off, or water may be drawn off through the channel at the bottom.

Claim.—The combination of the ice dish, reservoir, partition K, and tube for cleansing with the filtering medium, as and for the purposes set forth.

No. 46,647.—WILLIAM A. DUNCAN, Syracuse, N. Y.—*Machine for Raking and Loading Hay.*—March 7, 1865.—In this machine the rake teeth are fixed loosely in vertical slots in a frame, which is adjustable horizontally. The teeth are held in position by springs, which permit sufficient vertical and horizontal motion to allow them readily to pass obstructions. At the upper end of the machine is a cleaver, so slotted and curved as to readily free the carrying belt from all its load.

Claim.—First, the slotted clearing wedge K, when located in front of the shaft V, and constructed with slots *i i*, projecting over the said shaft, and with an inclined conductor *i*, all as herein shown and described.

Second, the vertical sliding rake teeth H, operating substantially in the manner and for the purpose set forth.

Third, the springs *n*, when constructed as herein shown and described, and employed in combination with the channels L and teeth H, in the manner and for the purposes specified.

Fourth, the combination of the springs *s* and the springs *n* with the teeth H, whereby a yielding horizontal and a yielding vertical play is allowed to the teeth H, substantially in the manner and for the purpose described.

Fifth, the longitudinal adjustment of the rake head *g* to and from the elevator, substantially in the manner and for the purpose set forth.

Sixth, the combination of the slotted clearing wedge K, the curved guard-board *m*, and the vertical sliding rake teeth H, with the endless apron or elevator D, all arranged substantially in the manner and for the purpose described.

No. 46,648.—CALVIN EATON, Webster, N. Y.—*Extension Ladder.*—March 7, 1865.—This invention relates to that class of ladders called extension ladders, and consists in the peculiar construction of a temporary splice to be applied to the top of the ladder.

Claim.—The combination and arrangement of the detachable section or extension B, constructed as set forth with the main ladder, in the manner and for the purposes shown and described.

No. 46,649.—AUGUSTUS ECKERT, Trenton, Ohio.—*Foot Warmer.*—March 7, 1865.—The lamp inside the square box has a metallic chimney, with an opening, glazed in any convenient way. The sides of the chimney are perforated, and to the top is joined an annular plate extending nearly to the sides of the box. Between the said plate and top of the chimney is a narrow passage for the smoke, &c. The top of the box is perforated. In one side of the box and opposite an opening in the chimney is a glazed opening, provided with a shield. The apparatus can be carried by a handle, arranged in any convenient manner.

Claim.—In combination with the casing A and door B the lamp F and chimney G, flaring plate J, horizontal plate K, and channels *j j*, constructed, arranged, and operating as and for the purposes described.

No. 46,650.—HENRY H. ELWELL, South Norwalk, Conn.—March 7, 1865.—This invention consists in a hooked and vibrating plate or cap, which holds the two sections of the latch-bolt together, and a tumbler operated by the key of the lock to force said cap from its hold upon the reversible section, and thus permit the latter to be withdrawn from the case, turned around, and replaced with the bevel in the opposite direction.

Claim.—First, the employment or use of the catch or fastening E, fitted on a pin *a'* of the part C of the side latch, and arranged substantially as shown, to engage with the part C of the latch, for the purpose set forth.

Second, the actuating of the catch or fastening E, by means of the key of the lock through the medium of the tumbler or any equivalent arrangement, substantially as described.

No. 46,651.—LUTHER ERVIN, Brooklyn, N. Y.—*Gas Stove.*—March 7, 1863.—This is a gas heater; the gas is turned on the perforated top of a gas chamber, and over this a corrugated conical cap is suspended from an upright flue, the product of combustion flowing into and around this cap up the flue, and through holes in the side at top, down another flue as far as the cover of the combustion chamber, and thence through the apertures into and up a third flue to the top of stove. The flues are formed by spaces between three cylinders of different diameter; a plate at the top covering the inner flues has perforations over the outer flue.

Claim.—The gas chamber D, provided with a perforated top E, in combination with the air and gas chamber G, all arranged substantially as and for the purposes herein set forth.

Also, the arrangement of the flues F I J, when used in combination with the gas chamber D, and air and gas chamber G, substantially as and for the purposes specified.

No. 46,652.—CHARLES FASOLDT, Albany, N. Y.—*Chronometer Escapement.*—March 7, 1865.—This invention consists in the use of a double scape wheel composed of two wheels of unequal diameter mounted upon the same shaft. The teeth of the smaller of these two wheels strike against the end of a lever which is connected to the balance wheel in the usual manner, and thus give to the balance an impulse sufficient to counteract the effect of friction and the resistance of the air. The teeth of the outer and larger scape wheel strike against two anchor pallets, which swing on the same pivot as the lever, and produce in the scape wheel a positive stop just before the completion of the stroke of the balance in either direction.

It is claimed that the friction between the teeth of the scape wheel and the pallets has no effect on the motion of the train or balance, the pallets acting simply as stops.

Claim.—The pallet *e*, arranged in combination with the pallet lever *c*, wheels *a b*, and balance *f*, in the manner and for the purpose substantially as herein shown and described.

No. 46,653.—SAMUEL W. FOSDICK and A. C. DAKIN, Clinton, Mass.—*Latch for Doors.*—March 7, 1865.—This invention consists of a double elbow lever, on the outer end of the lower horizontal arm of which is a hook, which, by its own gravity, drops into a notch in the catch. At the top of the upright arm of this lever, and at right angles thereto, is another arm running through the door, and having on its outer end a knob, the pulling which raises the hook out of the catch, and allows the door to open.

Claim.—The catch C, formed with a horizontal gravitating hooked arm *e*, adapted to catch in the plate F, and an upwardly projecting arm provided with a knob E, by a direct pull upon which the latch is retracted, all as herein described.

No. 46,654.—HENRY FRANCISCO, Lake Mills, Wis.—*Teeth for Cultivators.*—March 7, 1865.—In this invention the upper part of the teeth are in the form of an eccentric, and fastened in the slot of the cultivator beam near the middle of its rear portion. The forward part of the eccentric strikes against a spring or slotted side and a quick sharp stroke passes the eccentric by it, and allows the teeth to swing back and clear the obstacle.

Claim.—First, the eccentric standard to a cultivator tooth, constructed and operated substantially as described.

Second, the slotted slide and set screw, arranged and operated in the manner and for the purpose described.

Third, the combination of the set and set retaining device with the eccentrically hung shank of a cultivator tooth, substantially as and for the purpose described.

No. 46,655.—JOHN FREELAND and DANIEL WARD, New York, N. Y.—*Making Volute Springs.*—March 7, 1865.—This invention consists of a spring formed of a metal plate of suitable dimensions, being cut centrally nearly its whole length, and the two limbs thus formed spread apart or distended and then rolled, whereby a double volute spring is formed.

Claim.—A volute spring composed or formed out of a single plate cut or divided longitudinally nearly its whole length, with the cut portions spread apart and the plate rolled, substantially as herein shown and described.

No. 46,656.—FRANCIS M. GIFFORD, Brant, N. Y.—*Car Couplings.*—March 7, 1865.—This invention relates to a car coupling of that class termed automatic, and will be understood by reference to the claim and engraving.

Claim.—First, the drop bolt or pin F, and the link or shackle D, in combination with the pivoted bar H, and the brace or stay E, all arranged in relation with the draw head to operate substantially in the manner as and for the purposes herein set forth.

Second, the pin E′, in the rear part of the draw head, when used in connection with a link or shackle D, and a brace or stay E, substantially as and for the purpose specified.

No. 46,657.—J. H. GIVEN, H. HUTSONPILLER, and CHAS. GILBERT, Des Moines, Iowa.—*Cultivator.*—March 7, 1865.—In this invention the bar upon which the seat rests is jointed, and admits of the seat being turned entirely to one side, so that the driver may walk or ride at will; uprights pivoted to the frame join the inner plough beams at the bottom, and are themselves joined at the top by a bent metallic bar. The middle of this bar rests upon a lever, the end of which moves over the arc of a circle, and is fastened at any point by a spring and pin.

Claim.—The frame D pivoted or attached to the draught pole A, as shown in connection with the jointed set bar O, angle plates *p*, and the plates *r*, all arranged to admit of the ready elevation of the ploughs, as set forth.

Also, the uprights H H, connected at their upper parts to the lever J, and connected at their lower parts to the plough standards F F, and pivoted to the frame *d*, substantially as shown and described, to admit of the lateral movement of the ploughs G, as described.

No. 46,658.—HENRY B. GOODYEAR, New Haven, Conn.—*Bottling Apparatus.*—March 7, 1865.—This invention relates to a machine for filling bottles closed by the stopper, for which a patent was granted to E. Hamilton, January 5, 1864. Wires properly arranged seize the ball stopper and draw it into the neck of the bottle. A check prevents the ball from being drawn entirely through.

Claim.—First, the combination with the wire instrument for seizing and drawing up and forcing internal elastic ball valves into the necks of bottles for the purpose of closing or stopping the same, of a check piece operating in conjunction with said wire instrument, in the manner and for the purpose set forth.

Second, the machine or apparatus herein described for closing bottles by means of internal elastic valves, in the manner shown and set forth.

No. 46,659.—Robert A. Goodyear, New Haven, Conn.—*Snap Hooks.*—March 7, 1865.—This invention relates to the manufacture of snap hooks, in which, for the purpose of making the hook self-closing, an India-rubber or other spring is used within the hinge socket. The snap bar is cast with a deep recess inside at the point where the pivot runs through it, leaving only a wall or flange on each side to be perforated. The space between them is so large that two drills can be used upon the snap bar at once, and the holes perforated in a short time, to cheapen the manufacture.

Claim.—First, the recessed shank of the closing bar, when constructed for operation substantially in the manner and for the purposes set forth.

Second, as a new article of manufacture, a snap hook, the same consisting of a hook, a recessed hinge or closing bar, and spring, combined in the manner substantially as set forth.

Third, in combination with the recessed hinge bar and hook, a vulcanized India-rubber spring, the whole being constructed and combined in the manner and for the purposes set forth.

No. 46,660.—William J. Gordon and Edmond D. Gilbert, Philadelphia, Penn.—*Machine for Riveting Buttons in Cloth.*—March 7, 1865.—In this machine a hopper contains the buttons and an intermittingly sliding bar, with proper recesses for their accommodation, contains the rivets. A vertical needle passes down through the cloth and through the jaws upon which the cloth is placed; the needle is then arrested, while a sheath which surrounds it passes down beyond its point, grasps the end of the rivet and draws it up through the cloth, its head coming up against the under surface of the jaws, which consist of two thin flat plates abutting against one another with a hole at their juncture large enough to accommodate the sheath; the jaws, rivet, and cloth are then moved forward a certain distance until the head of the rivet is brought to rest upon an anvil directly under the punch. In the meantime a slide has pushed the lowermost one of the buttons out of the hopper and into a slot or chamber cut transversely in the lower end of the punch stock; the stock descends, carrying the button with it, displaces the jaws, and deposits the button on or around the upward projecting end of the rivet, and then the punch within the stock is driven down, by a heavy hammer, upon the end of the rivet, and thus rivets the button upon the cloth.

Claim.—First, in machines for attaching buttons to cloth or other material, feeding the rivet and the button, perforating the material, placing the rivet therein, advancing the cloth and rivet to the button, and uniting them by riveting, by mechanical devices constructed, arranged, and operating as a whole substantially as described.

Second, the needle and its tubular casing T, constructed and operating substantially as described.

Third, the jointed hook Q′, with its inclined face 29, for operating the hammer in its connection with the button-riveting machine, substantially as described.

Fourth, the combination of the punch stick K, casing J′, punch M, and spring K′, constructed, arranged, and operating substantially as described.

Fifth, the button chamber L′ in the bottom of the punch stock, substantially as described.

Sixth, the button chamber L′ in combination with the centring tube J′ constructed with a centring end M′, substantially as above described.

Seventh, releasing the rivet from its carriage by the impact thereon of the punch stock, substantially as described.

Eighth, the rivet carriage, constructed substantially as above described.

Ninth, the hopper in combination with the channel V, chamber L′, and the feeding slide W, substantially as described.

Tenth, operating the punch stock by means of the upper arm of the lever H, substantially as described.

Eleventh, operating the button feeding slide W by means of its sliding rod X, or its equivalent, and the sliding pin 10, substantially as described.

Twelfth, the combination of the ratchet G, bent lever I 14, and lever H, substantially as described.

Thirteenth, operating the pawl I on the return movement of the lever H, in the manner and by means substantially as described.

Fourteenth, the cross-heads 18 and 19 constructed as described in combination with the standards S S and Q^4, and cam E, for the purpose described.

Fifteenth, operating the cam by means of the pawl I on the lever B, and the ratchet G on the cam shaft, substantially as described.

Sixteenth, operating the rivet carriage by means of the lever H and lever Y, substantially as described.

No. 46,661.—John Greenwood, Rochester, N. Y.—*Machine for Making Barrel Heads.*—March 7, 1865.—The object of this invention is, to cut the heads of barrels in circle form, ready to set in a barrel, and it consists in a circular saw hung on an arbor attached to an adjustable plate, and driven by air power. A set of revolving clamps, between which the blank head is placed, is attached to a swinging frame turning on a pivot under the arbor of the saw, allowing it to swing up to the saw whilst the head is being sawed, and back again when the head is finished, which is effected by foot pressure on a treadle that operates a wedge cam acting upon a spring lever, which also moves up the arbor and clamps the blank head.

Claim.—So arranging the clamp-heads C C′ upon the swing-frame B, and combining therewith the sliding shaft D, that the said heads first clamp the boards in place, and then move up to cut the barrel head, substantially as herein set forth.

Also, in combination with the sliding shaft D and clamps C C′, the lever E and wedge-cam G, operating substantially as and for the purpose specified.

Also, the combination of the spring *d*, pin *g*, and collar *h*, with the shaft D, provided with the cavity *c*, slot *f*, the whole so arranged as to produce the reaction of said shaft to separate the clamps, and so as not to interfere with the twining of the shaft, substantially as described.

Also, the disk-wheel M mounted on the arm N, and both used in combination with the swing-frame B and piston-wheel O in such a manner that the forward motion of said swing frame will bring the two wheels in contact, and the back motion of the frame will disengage them, substantially as herein specified.

Also, in combination with the subject-matter of the preceding clause, the spring-catch *t*, substantially as described.

Also, the arms S S′, in combination with the clamp-heads C C′ and swing-frame B, to operate in such a manner that when the swing frame is drawn back the said arms will rest under the clamps to sustain the boards, but when moved forward the clamps will clear from them, substantially as described.

No. 46,662.—C. B. Guy, Lybrand, Iowa.—*Collision Brake.*—March 7, 1865.—The object of this invention is to prevent accidents arising from collisions on railroads, and it consists in the employment or use of a double-inclined truck mounted on wheels and placed in front of the locomotive of a train, the locomotive being connected to the inclined track in such a manner that it will disconnect itself in the event of a collision, and the locomotives and forward cars of the two trains pass up the inclined tracks and lose their momentum in the ascent.

Claim.—A collision brake for railroad cars, composed of a double-inclined truck mounted on wheels and placed in front of a train, and arranged so that the locomotive or front cars of two approaching trains, in the event of a collision, will ascend the inclined tracks and lose their momentum during their ascent, substantially as herein described.

No. 46,663.—Edward Hackett, New York city.—*Passenger Register.*—March 7, 1865.—This invention consists in the employment of a roller, to which an intermittent rotary motion is imparted by connecting it, in a suitable manner, with the hinged step of a street car, omnibus, or other public conveyance, and which is marked on its circumference with a series of figures placed in a spiral groove, to operate with an endless apron, carrying the indicating slide in such a manner that, for each start given the roller by the weight of a passenger acting on the step, the slide is propelled a proportionate distance, and a new figure is brought opposite to an opening in said slide, thus indicating the number of passengers passing in and out of the conveyance, with perfect accuracy.

Claim.—The roller E, provided with a spiral groove *g*, and marked with alternating figures and ciphers placed in a spiral row to operate in combination with the slide *i*, and with the hinged step A, sliding rod B, and weight C, or its equivalent, in the manner and for the purpose substantially as set forth.

No. 46,664.—A. M. Halsted, Rye, N. Y.—*Horse Hay Fork.*—March 7, 1865.—This invention relates to means for holding the fork in working position, and releasing the same for the discharge of the load. The tines are attached to the shank or handle by a pivot which plays up and down in a slot in the lower end of said shank. A spring catch, attached to the tines and fitting in a notch on the lower end of the shank, holds the tines up to an engagement with a lip further up the shank; but when this catch is withdrawn from the notch the tines slip down on the shank, tilt, and discharge the load.

Claim.—A horse fork provided with a shank C, having an oblong slot *c* for the pivot-bolt *d*, which connects the shank with the tines, to pass through in connection with the catch D in the head B, and the lip or projection *e* on the shank, all arranged to operate in the manner substantially as and for the purpose set forth.

No. 46,665.—William A. Hancock, Salem, N. J.—*Portable Heater for Liquids.*—March 7, 1865.—This invention consists of two parts, viz., the upper part or boiler for the water, and the lower part, in which the candle or lamp is placed; tubes extend from this lower part up through the boiler, through which the products of combustion pass, whereby the water is heated. The apparatus is so arranged that the heater can slip down in the base, and thus its bulk will be diminished nearly one-half. There are sockets in the bottom for candles, and when A is pushed down into the base these sockets fit neatly into the bottom of the tubes. It has a handle by which to carry it about.

Claim.—The combination of the heater A provided with tubes B and the base C, provided with sockets C′, the heater being adapted to slide up and down within the base and retained at any desirable height, substantially as and for the purposes specified.

No. 46,666.—Lorenzo D. Haughey, Atlanta, Ill.—*Cultivator.*—March 7, 1865.—In this invention the pole is so pivoted to the axletree that, by moving a lever to the right or

left, the ploughs can be deflected in either direction by changing the course of the bearing wheels.

Claim.—The pivoting of the axle A to the draught-pole D to admit of the lateral movement or adjustment of the ploughs, as set forth.

Also, the semicircular frame C attached to the front side of the axle, in connection with the friction-roller F and bolt or rod G, attached to the draught-pole D, substantially as and for the purpose specified.

No. 46,667.—J. HEALY, South Dansville, N. Y.—*Construction and Hanging of Gates.*—March 7, 1865.—This invention consists of a gate which may be opened from the right or left hand sides, and suspended at different heights above the ground to allow small animals to pass beneath, and which may be lifted off its points of suspension without making any changes in the gate or its posts.

Claim.—The gate above described, constructed and applied substantially as above set forth.

No. 46,668.—HERMAN HAUPT, Cambridge, Mass.—*Pneumatic Drill.*—March 7, 1865.—This invention consists of a cylinder in which steam or air is admitted to work a piston. The piston rod is hollow, passing through stuffing boxes at both ends of the cylinder. The drill rod is passed through the piston rod from either end, and is advanced by a peculiar mechanism as the drill penetrates the rock. The drill cylinder is stationary; the drill rod alone moves forward. The mode of mounting is peculiar, and admits of motion in any direction, while occupying the smallest possible amount of space.

Claim.—The method of and apparatus for drilling rock for mining, tunnelling, and boring purposes, substantially as hereinbefore described.

No. 46,669.—ALBERT H. HOOK, New York, N. Y.—*Apparatus for Folding Paper Collars.*—March 7, 1865.—In this invention an elastic surface is prepared in an inclined position to receive the collar when the knife strikes it upon the line to be folded, and the yielding bed permits an indentation in the collar by which it may be folded. There are guides for holding the collar in place, which are depressed by a cam movement when the knife descends, so that as the knife is lifted by a crank movement the collar falls to give place to another.

Claim.—The elastic folding surface in an inclined position on which the knife acts in folding, as described, in combination with the gauges *m*, substantially as and for the purposes set forth.

No. 46,670.—JAMES L. HOWARD, Hartford, Conn.—*Stove-pipe Damper.*—March 7, 1865.—In this invention the axis of the damper turns on bearings fixed on opposite sides of the pipe; one end is held by a nut. The bearings at other ends have a series of indentations, in which a projection or shoulder of the handle fits, so that the damper may be held in any position. By flexure of pipe the damper may be turned as desired. It is designed chiefly for cars and vessels.

Claim.—First, retaining the dampers of stove-pipes in any desired position by means of the elasticity of the pipe, substantially as above described.

Second, releasing the damper or its axis from the indentations *e*, or other device for holding the damper in place, by shortening the diameter of the pipe in the line of the axis of the damper, substantially as described.

No. 46,671.—FREDERICK M. HOWE, Providence, R. I.—*Breech-loading Fire-arms.*—March 7, 1865.—This invention consists in so combining the hammer of the lock with the latch, which secures the hinged breech piece when in place, that the said latch bolt cannot slide in to permit the breech piece to be closed, unless the hammer be placed at half-cock, or in an equivalent position, so that its striking face shall be so far back as not to touch the cartridge in the act of closing the breech. The lower half of the circumference of the cartridge is embraced by a wing, which lies between the flanch of the cartridge and the rear open end of the barrel, and is mounted to turn on the fulcrum of the hinged breech piece, and set into circular sockets of the breech piece, so that the latter when operated to open the rear end of the barrel shall move some distance without operating the wing, and then act upon it to cause it to draw out the cartridge case sufficiently to admit of readily reaching it with the fingers.

Claim.—In combination with the hinged breech piece so constructing the hammer and the latch bolt, substantially as herein described, that they shall act as a stop to prevent the closing of the breech, unless the hammer be first drawn back, as set forth and for the purpose specified.

Also, the special construction of the wing for drawing out the cartridge cases from the barrel with its flanches fitted to sockets in and combined with the breech piece, as herein described.

Also, making the hinged-swinging breech piece hollow to receive and contain the mechanism of the lock, in combination with the abutting shoulders at the sides to resist the recoil by abutting against corresponding shoulders in the mortise of the surrounding metallic case, as and for the purpose described.

No. 46,672.—W. Huston, Wilmington, Del.—*Steam Engine.*—March 7, 1865.—This invention consists in the application of four cylinders, one to each end of two heads, mounted on the ends of two shafts, which are parallel, but not in line with each other, and coupled together by a compound piston rod, moving in suitable guides or grooves in the head in such a manner that each pair of cylinders revolve in a true circle around the shaft to which they are connected; but the pistons of one set of cylinders act concentrically on the shaft of the other set, and rise *vice versa*, and in consequence of the eccentricity of the two divisions of the shaft with reference to each other the two pistons of one shaft are in position to exert their greatest force while the others are passing their dead points. Between the head to which the cylinders are attached and the engine are placed disk valves to control the induction and eduction of steam, and to these are attached levers for reversing the motion of the engine or for stopping it.

Claim.—First, the cylinders E E* E′ E′*, secured to the ends of heads D D′, mounted on eccentric shafts C C′, and operating in combination with a common piston rod and pistons F F* F′ F′* in the manner and for the purpose substantially as set forth.

Second, the use of the compound piston rod G, constructed as shown in figures 7 and 8.

Third, the disk valves H H′, applied in combination with the revolving heads D D′ and with the common starting and reversing bar I, in the manner and for the purpose substantially as described.

No. 46,673.—Walter Hyde, New York, N. Y.—*Well Borer.*—March 7, 1865.—This invention consists in the arrangement of an oscillating lever, which has its fulcrum on a pivot secured in an upright post, and is provided with a roller at or about the middle of its length to operate in combination with the rope to which the borer is suspended, and with a windlass and tappet wheel, so that when the rope, after having been wound around the windlass, is drawn through under the roller in the oscillating lever, and over a pulley in the top of an upright post, any up and down motion imparted to the roller in the oscillating lever produces twice as much motion of the drills; *i. e.*, if the roller be depressed one inch the drill rises two inches, and *vice versa*, and by these means the height of the stroke is doubled.

Claim.—First, the pulley *c*, arranged in the oscillating lever C, in combination with the drill rope E′, pulley *g*, windlass D, and tappet wheel or cams, constructed and operating substantially as and for the purpose set forth.

Second, the double gear *g h*, pawl *j*, or its equivalent, and the hand crank *i*, applied in combination with the drill rope and cams, substantially as herein described, so that the stroke of the drill can be adjusted and the drill raised or lowered while the machine is running.

Third, the shears I, applied in combination with the platform A and sectional drill rod H, substantially as and for the purposes specified.

Fourth, the use of a double windlass W W′ and adjustable stirrup S, in combination with the drill rope E′ and bucket rope E″, constructed and operating substantially as and for the purpose described.

No. 46,674.—Hector Hyves, New York, N. Y.—*Elastic Fabric.*—March 7, 1865.—The claim and drawings explain the nature of the invention.

Claim.—Making an elastic fabric suitable for bed bottoms and other analogous purposes by means of securing the strands to the frame and lacing them to resemble lattice work by passing the adjacent angles formed by the sinuosities of the cord through thimbles or short sections of India-rubber tubing, as described and represented.

No. 46,675.—John W. Ingle and R. W. Wright, Livingston, Ill.—*Cultivator.*—March 7, 1865.—In this machine a triangular frame is pivoted upon the centre of the draft-axle. On each side two teeth, connected by rods, move forward and backward upon segment bars. Curved levers operated by the driver's feet, and pivoted upon the side of the tongue, move the ploughs laterally. Levers, nearly parallel, and extending also to the driver's seat, lift the ploughs out of the ground.

Claim.—The frame D, attached to the axle A by a pivoted bolt *a*, and provided with pivoted plough standards H, connected by rods *k*, the segment bars J K, and levers L L, in combination with the levers G G, attached to the frame D, and draught pole C, all arranged to operate substantially as and for the purpose set forth.

No. 46,676.—John Jennings and George C. Sweet, West Meriden, Conn.—*Screw Plates.*—March 7, 1865.—This improvement consists of a method of holding dies in screw plates by means of two pins running through the plate longitudinally, one on each side, instead of the common square or V-shaped guides, and so arranged as to turn half a revolution on their axis. At one end of the opening in the plate for admitting the dies, these pins are half cut away for a space equal to the length of the ends of the dies; the ends of the dies are grooved in a semicircular manner so as to fit the pins, the latter being turned so that the side cut away presents itself to the end of the die when it is to be inserted in the plate. In turning them back again the dies are held in place.

Claim.—The employment or use of pins C C, fitted in the plate A, and provided with recesses *e e*, as shown, for the purpose of securing the dies B B′, in the plate A, admitting of their ready removal from the plates, as set forth.

No. 46,677.—JAMES L. ROBINSON, Ashburnham, Mass.—*Engine Lathe.*—March 7, 1865.—This invention consists in operating the cutter carrier back and forth from its work by inserting in a transverse groove in the bottom thereof, having in it, longitudinally, a doubly-curved slot, in which is a stud projecting from the nut of the transverse feed screw of the slide rest. When this has traversed nearly the distance, longitudinally, required by the work to be done, the slotted bar comes in contact with, and is stopped by, a dog fastened on the shears, while the continued motion of the rest forces the stud on the said nut, along the inclined or crooked slot in the sliding bar, causing it to give a motion to the cutter carrier outward from the work. An opposite movement of the slide towards the right forces the sliding bar against another dog, which reverses the motion of the cutter carrier and feeds it up to the work for a new cut.

Claim.—First, the method therein giving to the tool stock an automatic motion back and forth at the termini of the stroke of the slide rest by means of the slide *g*, and cam slot *f*, constructed and applied substantially as set forth.

Second, the application of adjustable lugs *l* to the hand wheel *d*, and screw *h*, which serves to operate the tool stock, in combination with a spring stop *k*, constructed and operating substantially as and for the purpose described.

No. 46,678.—O. W. KELLOGG, Ripon, Wis.—*Broom.*—March 7, 1865.—This invention consists in making a broom by securing the handle in the upper and smaller end of a metallic holder or socket, and the brush or other material composing the sweeping surface, in the other end.

Claim.—The broom above described as a new and improved article of manufacture.

No. 46,679.—LUCIUS J. KNOWLES, Warren, Mass.—*Mode of Weaving Buttonholes in Fabrics.*—March 7, 1865.—In this invention instead of weaving one side of each buttonhole, and then the other side entire, as is usual, and instead of using a divided reed for that purpose a single reed is employed, both for the weaving of the buttonhole and solid parts of the webbing, and weaves first a small portion on one side of the buttonhole, then flushes the warps, carrying the weft-thread outside the fabric, to the opposite side of the webbing, and weaves a small portion on the other side of the buttonhole, and so on, alternating from side to side until both sides are woven, thus allowing the reed to beat up the weft while the next succeeding portion may be in the act of being woven. The object of carrying the first and last shoots through the fabric is to secure it and prevent its being easily drawn out of place after the weft threads crossing the outer surface of the fabric may have been cut therefrom; and also that the shoot shall not interfere with the weaving of the weft into either set of warps.

Claim.—Improved mode, substantially as described, of weaving a fabric with buttonholes, the same consisting in weaving alternately of increments of the two marginal portions enclosing the buttonhole and running the weft thread on the outside of the fabric between the weaving of any two consecutive increments, the same being essentially as hereinbefore explained.

Also, in combination with my said improved process or mode of weaving webbing with a buttonhole, the running of the first and last shoots of the wefts of each increment of a marginal portion between the upper and lower sets of warps, the same being for the objects specified.

No. 46,680.—JOHN LAKE, Haydenville, Mass.—*Whip Socket.*—March 7, 1865.—This invention consists of springs along the inner side of the device, to firmly retain therein the whip, and at the bottom of the socket to prevent said bottom from being broken or forced out; the socket being secured to the dash-board by means of springs constituting clamps.

Claim.—First, the springs B, placed within the socket, and arranged substantially as and for the purpose set forth.

Second, the plate C, with the spring D underneath it, arranged with the lower part of the socket to operate substantially as and for the purpose specified.

Third, the securing of the socket to the dash-board by means of the springs E, substantially as shown and described.

No. 46,681.—WILLIAM K. LEWIS, Boston, Mass.—*Punch and Die.*—March 7, 1865.—This invention relates to that class of punches and dies used for cutting and pricking studs, caps or covers for tin cases, cans, &c., at one operation, and it consists in the employment of an adjustable pointed needle, passing through the centre of an adjustable and yielding die, so arranged that the die recedes as the plunger advances, and the needle remaining for the time stationary, the cap is cut out and the hole made simultaneously.

Claim.—First, the pricking needle F, applied in combination with the yielding centre piece D, die B, and punch A, substantially as and for the purpose set forth.

Second, the combination of the centre piece D and needle F, separately adjustable in height, and employed in connection with the spring E, in the manner and for the purposes explained.

No. 46,682.—THOMAS J. LINTON, Providence, R. I.—*Ice Sandal.*—March 7, 1865.—This invention consists in a sandal stamped out of sheet metal, covering the whole sole of the foot, and provided with a large number of holes, forming barbs like those of a grater, in

combination with ears catching over the heel and sole, the whole being held by leather straps, or other fastening.

Claim.—An ice sandal, stamped or otherwise, produced out of sheet metal, to fit the sole of a tool or shoe, and provided with a grater surface and lugs, and with a suitable fastening by which it can be secured to the foot, substantially as and for the purpose set forth.

No. 46,683.—THOMAS J. LINTON, Providence, R. I.—*Pump.*—March 7, 1865.—The object of this invention is to raise water by atmospheric pressure, made available by withdrawing the air from a reservoir, and thus causing a vacuum. Its novelty consists in the combination and arrangement of the shallow pans, reservoir, induction pipe, spouts, the drop-valve, and the ascension pipe, when by the combustion of hydro-carbon liquid in the pan the water is vaporized, and thereby produces a partial vacuum in the reservoir.

Claim.—First, the shallow pans B B′, in combination with the reservoir A, and induction pipe C, constructed substantially as set forth.

Second, the producing a vacuum in the reservoir A by the combined action of hydro-carbon liquid and steam, substantially in the manner set forth.

Third, the arrangement of the water pan B, and hydro-carbon pan B′, and reservoir A, whereby the combustion of the hydro-carbon liquid in the pan B′ will vaporize the water in the pan B, and thereby produce a partial vacuum in the reservoir, substantially as described.

Fourth, the measuring spouts *d d′*, applied in combination with the pans B B′, and closed reservoir A, substantially as specified.

Fifth, the method herein described of igniting the hydro-carbon liquid in the pan B′, by igniting a portion of said liquid in the spout and running such ignited liquid into the reservoir A, substantially as set forth.

Sixth, the drop-valve E, in combination with the ascenson pipe D, induction pipe C, and reservoir A, all constructed substantially as and for the purpose described.

No. 46,684.—THOMAS J. LUMMRUS, Lynn, Mass.—*Red Ink.*—March 7, 1865.—This invention consists of a composition of rosin, alcohol, distilled water, gum acacia and gum myrrh.

Claim.—The use of a solution of the above named salt in alcohol or other equivalent neutral spirit, as a red writing ink or fluid, substantially as described.

No. 46,685.—F. LUNKENHEIMER, Cincinnati, Ohio.—*Globe Valve Cock.*—March 7, 1865.—In this invention to facilitate the grinding of a globe valve down in its seat, the nut and stuffing box for the valve stem being made of one piece, or rigidly connected as usual, the nut, instead of being provided on its outer surface with a screw-thread, is turned off smooth, and fitted in the socket of the shell, where it is held by a cap, the relaxation of which cap permits the nut to revolve, with the stem, to grind the valve to its seat.

Claim.—A globe valve, in which the nut and stuffing box for the valve stem are made of one piece, or rigidly connected, the same as in an ordinary globe valve, but the nut, instead of being provided on its outer surface with a screw, is turned off smooth, and fitted in the socket of the shell, where it is held by a cap, substantially in the manner and for the purpose set forth.

No. 46,686.—LANSING MARBLE, Vassar, Mich.—*Washing Machine.*—March 7, 1865.—This invention consists in the employment of a cylinder, provided at its periphery with balls or spheres, placed in rows parallel with the axis of the cylinder, in connection with an endless apron and rollers.

Claim.—The cylinder C, provided with the balls or spheres *a* at its periphery, in combination with the endless apron I, arranged in connection with the fixed rollers *e′ e′*, all arranged to operate substantially as and for the purpose herein set forth.

No. 46,687.—A. A. MARKS, New York, N. Y.—*Artificial Leg.*—March 7, 1865.—This invention relates to an improvement in the knee joints, and the means employed to hold the leg in position when the knee is bent. The joint is formed by a T-shaped bracket or standard, the upper end of which is fastened to the thigh, and the lower ends have their bearings in oblique side pieces, secured to the sides of the kneepan in such a manner that their centres coincide with its centre. Attached to the rear of the T-shaped piece is a pear-shaped projection, which bears in a socket on the end of a vertical sliding bar, which is surrounded by a spiral spring enclosed in a box, the end of which works on a suitable socket in the interior of the leg, and which has an oscillating motion. When the leg is straightened the spring keeps it in that position, and when bent at right angles it has no tendency to stretch spontaneously.

Claim.—First, the oblique boxes *b*, applied in combination with the gudgeons of the T-shaped bracket D and with the shell of the leg and thigh, in the manner and for the purpose substantially as set forth.

Second, the pear-shaped button *f*, in combination with the spring *d*, oscillating box *g*, and with the bracket D, applied to the thigh and leg, in the manner and for the purpose substantially as described.

No. 46,688.—H. S. McKean, Alleghany, Penn.—*Trough for Raising Dough.*—March 7, 1865.—This invention consists of a box made with tapering sides, and provided with a steam pipe extending around the sides at the bottom. Inside of the box is the bread chest, which is provided with feet, so as to elevate its bottom above the steam pipe. The box is also provided with a thermometer, and also with perforated plates.

Claim.—The employment or use of a box or chest A, provided with a steam pipe B, arranged substantially as shown, in connection with a dough chest C, provided with feet or arranged in any suitable way, so that it may be fitted in A with its bottom above the steam pipe or above the bottom of A, for the purpose of raising dough for baking, as set forth.

Also, in combination with the box or chest A, heated by steam as described, one or more perforated shelves D, for the purpose specified.

No. 46,689.—Henry Messer, Roxbury, Mass.—*Hot-air Engine.*—March 7, 1865.—This invention consists in the arrangement of the lower end of the cylinder, the air pump, the fire box, and the feed box, the feed box being placed directly above and in close proximity to the fire box and pump and cylinder, all in the same plane. A chamber is provided around the cylinder in such manner that the air on its passage from the pump to the furnace will pass through it, and thus cool the cylinder and to some extent cool the air. The unoccupied space in the foundation of the engine is employed for generating steam by the utilization of the radiated and conducted caloric. A pump is provided for injecting into the air-tight furnace combustible fluid, to act in conjunction with the solid fuel contained therein, when all the products of combustion are passed through the working cylinder.

Claim.—First, the arrangement in a hot-air engine of the lower part of the cylinder, the air pump, the fire box, and the feed box, substantially as specified.

Second, the arrangement of the conduit around the cylinder, substantially as described, for keeping the upper part of the cylinder cool and utilizing the waste heat.

Third, the employment in the unoccupied space in the foundation *m* of a hot-air engine, for the reception of water, so that steam can be generated by utilization of radiated and conducted caloric, which would otherwise be wasted, substantially as described.

Fourth, in connection with the space in the foundation *m*, the separation of the cylinder therefrom by a casing *a*, substantially as and for the purpose described.

Fifth, dividing the space contained in the foundation *m* of a hot-air engine, by means of the partition *p*, when provided with a flange, as shown, by which a tight joint between the partition and covering plate *n* can be secured, substantially as and for the purpose described.

Sixth, the grate, as constructed, when arranged with reference to passages admitting air, both with or through it, and with provision for discharging the air between the fire pot and its lining, substantially as described.

Seventh, the employment, in combination with cup packing, of springs, by which the cup packing is so held to its place as to operate as designed under pressure.

Eighth, in a hot-air engine a tightly-closed fire box, and, working all the volatile products of combustion through the cylinder, the injection into the fire box, in connexion with ignited solid fuel, of combustible fuel, substantially as described

No. 46,690.—Henry Mitchell, Richmond, Ind.—*Combined Measure, Funnel, and Faucet.*—March 7, 1865.—A funnel is so placed that its top is level with the bottom of the vessel from which the fluid is to be drawn. A pipe descends from the bottom of such vessel to near the bottom of the funnel. Opposite the lower end of this pipe is the eduction pipe or faucet. An opening in the funnel at this level may be brought to coincide with the induction tube, to fill or empty the measure, by simply turning the funnel half round, and bringing its single lateral part into the desired position, as described.

Claim.—The arrangement, construction, and combination of the pipe B, cylinder C, measure D, and faucet H, as herein described and for the purposes set forth.

No. 46,691.—Albert Moore and James A. Cole, Northville, N. Y.—*Mode of Suspending Burners for Lamps.*—March 7, 1865.—This invention consists of a peculiarly-bent wire, operating as a hinge, to allow the burner to be elevated a little and turned over to fill the lamp with oil.

Claim.—First, a temporary hinge for lamp burners, operating substantially in the manner and for the purpose specified.

Second, providing a loop to guide the wick, for the purpose substantially as described.

Third, hinging the spring C to the lower portion of the burner, substantially as shown.

No. 46,692.—G. G. Livingston Morse and L. M. Herrick, Harrison, N. J.—*Knife, Fork, and Spoon Holder.*—March 7, 1865.—This invention consists of a device to be attached to dishes for the purpose of holding the handles of spoons, knives, or forks to prevent them from sliding down and falling into the dishes in which they are used.

Claim.—The combination of the hinged rest A with the clasp B C, constructed and employed as described.

No. 46,693.—Robert Nagler, Brooklyn, N. Y.—*Tobacco Pipe.*—March 7, 1865.—In this invention there is a metallic cup for holding the bowl, a lateral socket into which the

stem is inserted, and another socket projecting downward, into which the stem of a water reservoir is secured. A tube runs from one socket to another, and there is an aperture through the lowest part of the bowl and cup enclosing it, through which the smoke is drawn.

Claim.—The combination of the bracket B, formed separately from and adapted for the reception of the pipe bowl A, the sockets *a b*, tubes *c d*, stem C, and reservoir D, when the said parts are constructed and connected as and for the purposes herein specified.

No. 46,694.—A. W. OLD, Green Oak, Mich.—*Fruit Ladder.*—March 7, 1865.—In this invention the chief feature consists in connecting the two sections by means of adjustable braces, in combination with wheels placed on the lower end of the main ladder, by which means the ladder can be moved from place to place with ease.

Claim.—The two holders A A′, in connection with the brace or connecting rod C and the support B, and wheels *d′*, all arranged substantially as and for the purpose specified.

No. 46,695.—JAMES N. PEASE, Panama, N. Y.—*Churn.*—March 7, 1865.—This invention consists of a churn, placed within a frame attached to rockers, the said frame having vertical slots made therein at its upper ends, which allows for the movement of cross-pieces placed horizontally within the said slots. Attached to the main cross-bar is a reciprocating dasher, which receives its movement automatically from the rockers, thus producing an oscillating and reciprocating motion simultaneously.

Claim.—The churn A, placed in a frame B mounted on rockers C C, in combination with the bars F F, arms or levers G G, and bar I attached to dasher-rod H′, all arranged and applied to operate in the manner substantially as and for the purpose herein set forth.

No. 46,696.—JACOB PETERSON, Canoga, N. Y.—*Artificial Arm.*—March 7, 1865.—In this invention the wrist joint is constructed of two tubes, one of which has upon it a wide screw thread and fits into the other.

Claim.—First, the use of the flexor cords *f f f*, Fig. 1, and the strap F, for the purpose of closing the fingers and thumb, essentially as above described.

Second, the use of the elastic strap *o*, Fig. 4, in combination with the strap F and the flexor cords *f f f*, Fig. 1, for the purpose essentially as above described.

Third, the use of the hook and eye marked *p*, Fig. 5, said cross-piece *r*, Fig. 5, in combination with the elastic strap *o*, Fig. 4, and the flexor cords *f f f*, and strap F, Fig. 1, and rod or shaft X, Fig. 5, substantially as above described.

Fourth, the wrist joint, constructed essentially as above described, in combination with the flexor cords *f f f* and strap F, Fig. 1, as above described.

No. 46,697.—J. PLUMER, Boston, Mass.—*Spring Catch for Door.*—March 7, 1865.—In this invention the catch-bolt passes through the door, its two ends projecting outside thereof, and provided, one of them, with a knob, by which the bolt may be conveniently operated, and the other with a conical head or button for entering the nosing. The bolt is held in position by a ring of India-rubber, which is fitted within a groove formed around the middle of the bolt, and which is thus compressed and forced about half-way through the door in a hole prepared for that purpose.

Claim.—First, the use of rubber in spring catches, when so arranged in reference to the inelastic portion of the catch as to partially or entirely encompass it, and operating by means of its flexibility or bending property in any or all directions.

Second, the combination of the rubber with the catch, as above described, substantially as and for the purposes enumerated.

No. 46,698.—WM. B. POLLOCK, Youngstown, Ohio.—*Hot-blast Pipe.*—March 7, 1865.—This invention consists in providing the trunks with short pipes; the said trunks being divided centrally and longitudinally by a vertical diaphragm which passes from the bottom of the trunks to the top of the short pipes. The trunks are united by the coupling-pipe, and the trunks are also divided vertically and longitudinally by the diaphragms that register with diaphragms in the short pipes. The pipes are made in sections, united at their upper ends, and the diaphragms extend to near the upper ends of said section. Between these sections are secured partitions.

Claim.—First, the combination of the trunks B B′ with the sectional pipes C and connecting pipe D, arranged substantially in the manner and for the purpose set forth.

Second, the combination of the trunks, diaphragms, and section pipes, substantially in the manner described, so that an injured or worn tube or section may be singly removed and a new one inserted without stopping the blast longer than merely to make the removal or change of the section.

Third, making the continuous pipes in sections, and so uniting them with the trunks that any one of the several pipes may expand unequally and independently without fracturing the other, having a different expansion, as set forth.

No. 46,699.—R. W. POTTER, New York, N. Y.—*Picture Card Frame.*—March 7, 1865.—This invention consists of a card provided in its centre with a raised frame in such a manner that an ambrotype, daguerreotype, or other photographic picture can be placed in the

cavity at the back of the card and will form the frame for the picture, so as to fully exhibit the same. The centre of the card is cut out to suit the size of the picture, and the border around the hole is embossed.

Claim.—A card frame A B, made in the manner herein shown and described.

Also, cutting and embossing the hole *a* in border B in the card A by one and the same operation, as set forth.

No. 46,700.—ROBERT POTTS, Camden, N. J.—*Process for Treating Navassa Guano.*—March 7, 1865.—This invention consists in spreading the guano on a floor and sprinkling sulphuric acid over it, by means of watering pots or other suitable means. The mass is thus prevented from sticking together, and also from heating, and, after the whole quantity of acid has been added, can be sifted and put into barrels for use.

Claim.—The within described process of making superphosphate of lime from Navassa guano, or all guano containing more than six per cent. of iron and alumina, by sprinkling the requisite quantity of sulphuric acid over the guano in the form of rain, or as near as possible in that form, while the mass is continually agitated, substantially as and for the purpose set forth.

No. 46,701.—WILLIAM PRICE, Cincinnati, Ohio.—*Machine for Washing and Cleaning Clothes.*—March 7, 1865.—This invention consists in a clothes-washer having a combination of arms, horizontal pins extending above and below the arms, operated by a hand lever.

Claim.—The combination of the arms C C with the horizontal pins *d d*, the vertical pins *e e e*, and hand lever D, substantially as and for the purposes herein set forth.

No. 46,702.—JEROME REDDING, Maplewood, Mass., and NATHANIEL W. REDDING, Charlestown, Mass.—*Sand-paper Holder.*—March 7, 1865.—The object of this invention is to provide a device whereby sand-paper and emery-cloth can be firmly held while being employed in smoothing the surface of work. It consists, also, in two pieces of flat metal, or other material, on the face of one of which pieces is placed the paper or cloth, and between the two pieces the same is fastened by thumb screws.

Claim.—First, the employment of two pieces A B of metal, or other suitable material, in connection with a thumb nut and screw for holding and affording a bearing for sand-paper and emery-cloth, substantially as herein described.

Second, the deflected parts *b b* and fingers or prongs *b' b'*, in combination with the guide A' and guide-way B', the whole being employed to facilitate the application of the emery-cloth or sand-paper to the holder, in the manner herein explained.

No. 46,703.—JOSEPH RENSHAW, Michigan City, Ind.—*Tool for Cutting Off Stay and other Bolts.*—March 7, 1865.—This invention consists of a cylinder or tube, the bore of which is made to fit the bolt to be cut. The upper end of this is thinned off from the outside, slit longitudinally in halves, and surrounded by a ring with a set screw, by which it can be clamped upon the bolt. On the lower end of this cylinder is a shoulder, formed by a collar, upon which another shoulder, formed by an interior collar on the surrounding cutter-stock rests, and by which it is guided and supported. This cutter-stock is operated by a lever in the same manner as a ratchet drill. The cutter-bar is pivoted at one end in a slot in the periphery of the stock, and has a cutting spur projecting inward toward the centre, and is fed in that direction by a screw behind it in the cutter-stock.

Claim.—First, the clasp sleeve for holding the tool to the bolt to be cut, constructed substantially as described.

Second, the combination of the clasp sleeve and the stock I, substantially as described.

No. 46,704.—EDWIN REYNOLDS, Mansfield, Conn.—*Key for Lock.*—March 7, 1865.—This key has two shanks, two handles, and two sets of bits. The shanks are fitted one within the other; the two sets of bits interlock with each other, and, if turned in one direction, both sets may be made effective in elevating the tumblers, or, by turning the inner shank a quarter of a revolution, the bits upon its end may be thrust out beyond the other bits, and thus the two sets be made to operate separately or together and in either direction.

Claim.—A key made with a series of auxiliary bits, interlocking with the main bits, and so as to be capable of rotation and operation therewith in one direction, and independently thereof in the other direction, substantially as set forth.

No. 46,705.—HARVEY A. REYNOLDS, New York, N. Y.—*Velocipede Trotting or Pacing Horse.*—March 7, 1865.—In this invention the horse is mounted on wheels provided with reversed cranks, and the legs of the horse are jointed, which enable it to have the motion of trotting.

Claim.—First, a velocipede trotting or pacing horse, mounted on wheels, and having the axle of the forward or driving wheels provided with reversed cranks, to act on the jointed legs B B, substantially as explained.

Second, the jointed legs B C, connected by rods L, and the latter secured to the stirrups K of the axle of the driving wheels, substantially as and for the purpose specified.

No. 46,706.—Wm. Archer and Clinton Rice, New York, N. Y.—*Manufacture of White Lead.*—March 7, 1865.—This invention consists of a close vessel provided with apertures for the admission of vapors of acetic acid, or carbonic acid gas, and an aperture for the escape of such vapors or gases. The said box is provided with a rotary drum, to which the lead is attached, and a brush or scraper which presses against the surface of the drum as it revolves.

Claim.—The continuous or intermittent removal of the white lead from the surface of metallic lead, as fast as desirable, by means of a stationary revolving or reciprocating brush or scraper, applied in combination with a revolving or stationary drum or frame, substantially as described.

No. 46,707.—Esek C. Roberts, Salem, Mich.—*Method of Preserving Fruit, &c.*—March 7, 1865.—This invention consists of chambers provided with double walls, the spaces between said walls being filled with non-conducting material, such as sawdust, &c. The said chambers are surrounded by blocks of ice, cemented together with snow or pounded ice, in the same manner as bricks are united with mortar. The said chambers are provided with several doors leading to small rooms, each room being made colder than the preceding one. In the chamber nearest the large chamber is placed a metallic cylinder, which is filled with ice.

Claim.—First, the herein-described construction of one or more chambers, arranged with an ice-house or fruit-house, and surrounding the same with a poor conductor of heat, as and for the purposes herein set forth.

Second, one or more condensers, constructed as described, and placed within the chamber, as and for the purpose specified.

No. 46,708.—Charles E. Rowan, Brooklyn, N. Y.—*Machine for Hulling, Cleaning, and Polishing Rice.*—March 7, 1865.—The construction and arrangement of the parts are set forth in the claim and engravings.

Claim.—First, the combination of the two concentric cones D and E, provided with open removable frames G, and adjustable endwise in relation to each other, in the manner and for the purposes herein specified.

Second, constructing the rubbing surfaces of steel wires 1, set endwise in the frames G, as herein shown and described, so as to admit of setting or repairing the rubbing surfaces by tapping the wires from the back, as explained.

No. 46,709.—Charles A. Ruff, Providence, R. I.—*Knife for Opening Tin Cans.*—March 7, 1865; antedated February 23, 1865.—In this device there is projected from the end of the handle, and in line with its axis, a stout metallic stem, with a cutting blade at its end, the latter projecting some half of an inch or thereabouts in advance of a curved guide plate, which, issuing from the same end of the handle, is curved upwards, and has a slot made in its curved portion through which the blade passes, the curved plate thus serving as a support to the blade, a guard to the finger, and a guide to limit the depth of cut. There is also a flange projecting from the plate, into which is tapped a thumb-guide screw, which, sliding against the edge of the can, controls the direction of the cut.

Claim.—A knife provided with a fulcrum to rest or rock on, the tin being cut, constructed, and arranged substantially as described.

No. 46,710.—Cyrus W. Saladee, Putnam, Ohio.—*Curry-comb.*—March 7, 1865.—This invention consists in providing a curry-comb with an arched back or frame, to which is connected the ordinary handle, placed at right angles with the teeth, and by which is gained the advantage of two separate ways of grasping the comb, viz: First, by grasping the ordinary handle, or when that is not desirable, the comb may be grasped immediately over the top of the frame.

Claim.—The arched frame or back A A A1 A2 of the curry-comb, in combination with the handle C C1, in the manner and for the purpose substantially as shown and described.

No. 46,711.—Cyrus W. Saladee, Putnam, Ohio.—*Stirrup.*—March 7, 1865.—This invention consists of a cross bar of metal passed through the sides of the stirrup, immediately under the stirrup strap, and there made secure. To this cross bar the top end of the guard is rigidly fastened.

Claim.—The cross bar C, in combination with the guard B and the stirrup A, in the manner and for the purpose substantially as shown and described.

No. 46,712.—Cyrus W. Saladee, Putnam, Ohio.—*Stirrups.*—March 7, 1865.—This invention consists in attaching to the top of wood stirrups a metallic cap or loop for the purpose of holding together the two sides of the stirrup leather, immediately over the top of the stirrup, in order to retain the same in proper position on the stirrup under all circumstances.

Claim.—The cap A, in combination with the cross bar F and stirrup leather E, in the manner substantially as shown and described.

No. 46,713.—Joseph G. Savage, South Reading, Mass.—*Machine for Pulverizing Sand, &c.*—March 7, 1865.—This invention consists in a machine constructed and arranged so as

to sift and pulverize sand by means of a grinding plate, working against a vertical yielding bed and a revolving wire gauze cylinder, by which the sand is effectually sifted.

Claim.—The machine, constructed and operated substantially as above described, for pulverizing and reducing sand and other material, and sifting the same, as set forth.

No. 46,714.—WILLIAM and COLEMAN SELLERS, Philadelphia, Pa.—*Machine for Rifling Gun Barrel.*—March 7, 1865.—This invention consists in arranging the various mechanical devices in such a manner that the starting of each one of the series of motions or operations necessary to the process of rifling a gun barrel shall be dependent upon the absolute completion of the motion or operation immediately preceding; and so, also, that should any accident prevent the completion of one motion of the series, the operation which ought to succeed it will not take place until the impediment shall have been removed. The machinery which operate the rifling rod is arranged so that should the cut prove to be too heavy for the strength of the rod, the driving mechanism will be disengaged and the machine thereby be stopped. A lubricating or washing device is arranged at the end of the barrel, by means of which jets of oil are forced by a pump upon the cutters as they emerge, so as to wash away the chips.

Claim.—First, arranging the movements of a machine for rifling gun barrels in such a manner that they shall take place in a series or order, the starting of each one of the series being dependent upon the final movement of the previous one of the series, substantially as and for the purpose specified.

Second, stopping the motion of the rifling rod at one end of its stroke, and causing the other movements to take place, as described, while the rifling rod is at rest.

Third, arranging the driving power of the rifling rod in such a manner that it shall be able to perform the work required, but will disconnect itself and stop under a strain too great for the rod to bear with safety.

Fourth, the use of a washing box or boxes, substantially as described and for the purpose specified.

No. 46,715.—G. W. SMITH, North Whitehall Township, Pa.—*Liniment.*—March 7, 1865.—This invention consists of a mixture of spirits of camphor, spirits of turpentine, alcohol, and fowl oil.

Claim.—A liniment composed of the ingredients herein specified, and mixed together, substantially in the manner and about in the proportion set forth.

No. 46,716.—HANNIBAL B. SMITH, Springfield, Mass.—*Side-hill Plough.*—March 7, 1865.—In this plough the mold board is made to turn on pivots, and is secured when in place by the coulter or brace, which may be moved from side to side. The ploughshare has a point at each end, attached to the beam by means of a pivot, upon which it moves, and is provided with a flange, upon which the beam revolves. The flange is provided with notches to receive a spring catch, which is also provided with a lip, extending under the flange, and serves to steady the share when in the furrow.

Claim.—The combination of the mold board D with the share B, flange beam A, spring catch *c*, and lip *d*, or their equivalents, operating substantially as described.

No. 46,717.—E. R. SPAULDING, St. Louis, Mo.—*Machine for Making Heads of Casks.*—March 7, 1865.—This invention consists of two circular heads, so arranged upon lathe mandrels that the stock from which the head is to be cut is placed between the heads and clamped by screwing up the loose mandrel; when the heads are revolved, the heading passes between two adjustable arms, having the tools that cut the head to the desired diameter, and bevelling the edge at the same time. These arms can be changed to cut heads of greater or less diameter by turning a graduating screw, or they can be expanded to work thicker stuff by oscillating a lever that works a shaft, to which, on the opposite sides, are short levers pivoted to the arms.

Claim.—First, the combination in a lathe of the rotating disks or heads I, the vibrating arms carrying tools for cutting out and chamfering the heads of kegs and other work of like character, and the sliding table which carries the arms, substantially as and for the purpose described.

Second, constructing and arranging the chamfering tool stock and the cutting tool stock C, in the order and manner herein shown, upon vibrating arms, constructed and operated so as to be adjustable for different diameters and sizes of work, and for different thicknesses of bevel, substantially as above described.

No. 46,718.—T. S. SPERRY, New York, N. Y.—*Manufacture of Skirt Wire.*—March 7, 1865.—This invention consists in covering the ordinary skirt wire with fine plated or tinned ware, or of other non-corrosive metal, instead of the usual covering of cotton or other textile fabric.

Claim.—The above-described skirt wire as an article of manufacture, consisting of a close coiled covering of wire, with a non-corrosive surface over a central skirt wire, substantially as described and represented.

No. 46,719.—Leonard A. Sprague, New York, N. Y.—*Lever Buckle.*—March 6, 1865.—In this invention the lever is composed of a single strip, and secured to the hinge bar by means of staples cut out of the body of the lever. The frame is formed of sheet metal, and the front is bent so as to present a bevelled surface to the front edge of the lever.

Claim.—First, a lever buckle in which the lever is composed of a single strip, and secured to the hinge bar by means of stoppers cut out of the body of the lever, substantially as set forth.

Second, a lever buckle, operating as described, forming the frame of sheet metal, and corrugating or bending the front or impinged bar thereof, so as to present a lever surface to the front edge of the lever, substantially as set forth.

No. 46,720.—John J. Squire, Windsor Locks, Conn.—*Fruit Can.*—March 7, 1865.—This invention consists in making a jar with feet, so that when placed in warm water there may be a free circulation of water under the jar. A recess is made in the neck of the jar, in which the projection of the cover engages, by which means the cover is prevented from turning with the locking bar.

Claim.—First, in jars for preserving fruits, meats, and other substances forming pedestals on the bottom thereof, so as to obtain a free circulation of the heating medium beneath them when they are placed in such medium, in the process of putting them up for market, substantially as described.

Second, also the cover C formed with projections *c* F F′ in the described combination, with the packing ring *b* and locking bar E, for the purposes set forth.

No. 46,721.—Nelson Stafford, Brooklyn, N. Y.—*Lock.*—March 7, 1865.—In this lock a sliding plate to which the bolt is attached carries also a horizontal stem or pintle, upon which are arranged crosswise a number of short rocking levers, which lock the bolt by falling at one end into notches formed in the edge of a stationary flange. To operate the lock a blade key is introduced through a narrow and elongated slot in the case and pressed upon, which depresses the inner ends of the levers and raises their opposite ends up out of the notches in the flange, and then, by an endwise pressure upon the blade key, the sliding plate, bolt, pintle, levers, and the key itself will all move together.

Claim.—First, a series of tumblers swinging in a plane at right angles, or nearly so, to the line of motion of the bolt, and moving with said bolt, in combination with stationary wards, substantially as specified.

Second, the combination of a plate key with a sliding bolt and tumblers when said bolt is moved by an endless motion given to said key, as specified.

Third, the bolt carrying the tumblers and fitted as specified, in combination with the key and stationary ward bar, as set forth.

No. 46,722.—Jacob S. Steiner, St. Louis, Mo.—*Binding Attachment for Sewing Machines.*—March 7, 1865.—In this invention the pressure guide is not only adjustable to or from the edge turners, but also longitudinally to correct the too wide separation of these turners at their point of convergence, when the guide is moved from them to admit thick goods, and thus always securing the requisite pressure of the binding close up to the edge to be bound, whether operating on delicate or heavy fabrics. The guides are adjustable against the edges of the binding to guide it to the binder, and the adjustable guide holds the binding in a vertical position previous to its passing between *i* and *t*.

Claim.—First, in combination with the edge turners *e e′*, the enclosed pressure guide *d* secured to the adjustable plate B′, and arranged and operating substantially in the manner and for the purpose herein set forth.

Second, the spring pressure plate or foot *h* combined with the tapering edge turners *e e′* and enclosed pressure guide *d*, arranged and operating substantially as and for the purpose herein set forth.

Third, the slides *m m′* and guides *i* and *t* combined and arranged substantially in the manner and for the purpose herein set forth.

Fourth, the employment of the adjustable guide *w*, substantially in the manner and for the purpose herein set forth.

No. 46,723.—A. J. Stevens, San Francisco, Cal.—*Piston Packing.*—March 7, 1865.—This invention consists in the use of a T-shaped and two L-shaped rings in combination with the head and follower of a steam piston, in such a manner that the three rings are held in position by each other and by the piston heads and follower, and the L-shaped rings project up over the outer edges of the head and follower, and flush with the outer surfaces of the same, for the purpose of securing an increased surface between the packing rings and the cylinder.

Claim.—The arrangement of a T-shaped ring E, two L-shaped rings F, piston head A, and follower D, constructed and operating in the manner and for the purpose substantially as herein shown and described.

No. 46,724.—Robert Stewart, Brooklyn, N. Y.—*Apparatus for Filtering Liquids.*—March 7, 1865.—This invention consists of three filtering cylinders fixed upon a rotary shaft,

the filtering cylinders being enclosed in a casing, which is provided with a closely fitting cover. The filtering chambers are filled with bone black, and the liquid to be filtered enters through the hollow part of the shaft and falls upon the disk, which prevents the liquid from collecting at the bottom of the filtering chamber. The filtered liquids collects on the rings and on the side of the casing, and are discharged by the pipe.

Claim.—First, in connection with the filtering chamber G, the construction and arrangement of the central receiving chamber K and hollow shaft adapted to prevent the escape of the vapor and the overflow of the liquid, substantially as set forth.

Second, the distributing disk L arranged and employed substantially in the manner and for the purpose herein described.

No. 46,725.—Emerson C. Strange and George R. Huntley, Taunton, Mass.—*Boiler Furnace.*—March 7, 1865.—This invention consists in combining a wind wheel with a series of perforated pipes placed in the walls of a furnace and within a case made for the purpose, in such a manner that upon the introduction of steam to the pipes a rotary motion of the wheel is produced, and a mingled current of air and steam is introduced into the furnace, either above or below the grate.

Claim.—First, the combination of a wind wheel with a series of perforated pipes placed in the walls of a furnace, either above or below the grate bars thereof, substantially as and for the purpose above set forth.

Second, the combination of the open casing B provided with perforated pipes leading from a central hub, as described, with doors F for shutting off the supply of atmospheric air, substantially as above set forth.

No. 46,726.—Herman Strater, Jr., Boston, Mass.—*Faucet.*—March 7, 1865.—This invention consists in the construction of a faucet, with a sleeve projecting inward from the cap and around the stem, and a packing of rubber around said sleeve and extending below it, the pressure of water when the faucet is opened packing the rubber tightly around the stem and around the sleeve, and preventing leakage; also in the employment in connection therewith of a metal washer cushioned upon rubber, for the valve upon the screw plug.

Claim.—The arrangement of the sleeve *o o* and the elastic packing *p p* placed within the cap *n n*, as described.

Also, in combination with the above arrangement, the metallic packing furnished with an elastic backing, and operating substantially as described.

Also, the stop *m* for preventing the wear of the metallic washer on its backing, as described.

No. 46,727.—Herman Strater, Jr., Boston, Mass.—*Faucet.*—March 7, 1865.—This invention consists in the construction of a faucet with an air chamber or passage above the outlet and around the screw plug, so that the liquid ejected from the pipe shall tend to create a vacuum, and cause the commingling of the air rushing in and the liquid being discharged from the flame.

Claim.—First, the spaces or chambers to which air has free access around the tube through which the liquid passes in such a manner that when a vacuum, or partial vacuum, is created in the chamber in which the said tube is located by the downward current of the said liquid, the air and liquid will be commingled, substantially as specified.

Second, the combination of the screw plug *h h*, extension tube *d d*, and in spaces or chambers *g g*, arranged and operating with regard to each other substantially as described.

No. 46,728.—Herman Strater, Jr., Boston, Mass.—*Faucet.*—March 7, 1865.—This invention consists in the employment of a hollow screw plug or valve in connection with an extension up into the same of the inner end of the inlet pipe of the faucet, the construction dispensing with the ordinary screw cap and washer, as the in-rushing liquid is deflected, and caused to rush down through the outlet by the inner surface of the screw plug, and will not force up the outer side of the screw upon the screw plug.

Claim.—The arrangement of the travelling socket and extension tube, operating together substantially as described.

No. 46,729.—T. L. Sturtevant, Boston, Mass.—*Stove.*—March 7, 1865.—This invention consists of a stove provided with an internal air-heating chamber, open at its top, closed at bottom, and communicating at the lower end with the external air by a series of radial tubes, which extend across the space or flue between the chamber and case of the stove. It has also a perforated partition plate extending across the above-mentioned space or flue near the top.

Claim.—A stove provided with an internal heating chamber B, open at its top, closed at its bottom, and communicating at its lower end with the external air by means of a number of radial tubes *b*, which extend across the space or flue *a*, between the chamber B and the case of the stove, substantially as and for the purpose specified.

Also, in combination with the air-heating chamber B, arranged as shown, the perforated plate D, as and for the purpose set forth.

No. 46,730.—Dexter Symonds, Lowell, Mass.—*Lamp.*—March 7, 1865.—This invention consists in the combination of a thin metal jacket, with elongated air openings around the wick tube, and insulated from it by means of a non-conducting plug.

Claim.—The thin metal jacket B formed with elongated air openings *b b* placed on or around the wick tube C, and insulated from the latter by means of a non-conducting plug E, all substantially as and for the purpose herein set forth.

No. 46,731.—E. B. Taylor, Natick, Mass.—*Clothes Dryer.*—March 7, 1865.—This invention consists in the employment of jointed frames secured on the outside of a window by hooks and guys; a portion of the frame is made to turn, so that it may readily pass in and out of the window. There are cords on which the clothing is hung.

Claim.—First, the frame B provided with the rope D and applied to the window A, substantially as shown, in connection with a clothes frame F suspended to B, and provided with cords for the purpose specified.

Second, the construction and arrangement of frame F to admit of the revolving of the same and the winding of the clothes upon it, for its ready application to and removal from frame B, substantially as described.

No. 46,732.—J. H. Thomas and P. P. Mast, Springfield, Ohio.—*Attaching Drill Teeth to Seeding Machines.*—March 7, 1865.—This invention consists in bracing a drill tooth to a drag bar, by means of a separate brace bar, in such a manner as to allow the drill teeth to swing or fold forward without breaking the wooden pin.

Claim.—Bracing a drill tooth or tube to a drag bar, by means of a separate brace bar, in such a manner as to allow the drill tooth to swing or fold forward without breaking the wooden pin, substantially as and for the purpose set forth.

No. 46,733.—William R. Thomas, Catasauqua, Penn.—*Piston Packing.*—March 7, 1865.—This invention consists in providing a double internal ring, fitting between the piston head and follower, and provided with a transverse partition connecting the two sections of the ring together, and extending beyond the outside ring towards the packing rings. This internal ring is combined with two sets of secondary packing rings, which are separated from each other by said partition, and with holes in the piston head and follower, said holes passing through the internal ring, thus allowing the steam that is admitted on either side of the piston to act upon the recording rings and through them upon the outside or packing rings, and forming a tight joint between them and the cylinder.

Claim.—The double shell D E, provided with holes *f* in the outside shell, and with a partition *a* and flange *c*, in combination with holes *d d* in the head and follower of the piston, and with secondary packing rings F and main packing rings G; all constructed and operating in the manner and for the purpose substantially as herein set forth.

No. 46,734.—Jesse G. Thompson, Carbondale, Penn.—*Composition for Coating Oil Barrels, and for other purposes.*—March 7, 1865.—This invention consists in a mixture of linseed oil and glue to be applied to the inner surface of oil barrels.

Claim.—Mixing linseed oil with glue as herein described, for the purpose set forth.

No. 46,735.—Sardis Thompson, Monterey, Mass.—*Machine for Cutting the Curd of Cheese.*—March 7, 1865.—This machine consists of an oblong box or case in which is placed a hollow cylinder, open at one end and revolving upon a horizontal axis. In the exterior periphery of the cylinder are grooves containing fleams—knives being also arranged upon the cylinder, beneath which are throats. From the side of the case projects a semi-cylinder or bed-piece, so arranged as to allow the curd to pass between it and the interior surface of the cylinder. On the semi-cylinder are two slides moving in grooves and fitting in the interior surface of the cylinder, to which slides an alternate reciprocating motion is given by means of springs.

Claim.—First, the hollow cylinder with the groove fleams, knives, and throats, in combination with the cams.

Second, the semi-cylinder or bed-piece, with its grooves, slides, springs, and fleams, in combination with the cylinder.

No. 46,736.—Henry Tubesing, Pittsburg, Penn.—*Flexible Forms for Graining, Printing, &c.*—March 7, 1865.—This invention consists in making the face of the form of gutta-percha and India-rubber, and the body of printers' roller composition. The face is made by coating the mould with a thin solution of gutta-percha and India-rubber. After it is dry the body of the form is made by pouring in the printers' roller composition in solution.

Claim.—Making flexible and elastic forms for printing, graining, &c., of India-rubber or gutta-percha, or a mixture of India-rubber and gutta-percha, with a body or backing of printers' roller composition, (glue and molasses,) substantially as hereinbefore described.

No. 46,737.—D. F. Walker, Bowling Green, Ky.—*Adjustable Eccentric.*—March 7, 1865.—This invention consists in the use of a grooved sleeve, provided with two wedge-

shaped projections and made to slide in a longitudinal direction on the shaft, which carries the eccentric disk; the said projections operating in combination with the eccentric disk in such manner that, by shifting the sleeve on the shaft, the throw of the eccentric can be regulated at pleasure, without stopping the motion of the shaft on which the eccentric is mounted, or that of the eccentric itself.

Claim.—The sleeve *h*, provided with wedges *g* inclined in opposite directions and fitted to the shaft A by feathers *i*, in combination with the disk B, furnished with an oblong slot *e*, and fitted to the shaft by notches *d*; all constructed and operated substantially as and for the purpose set forth.

No. 46,738.—C. L. WESTBROOK, New York, N. Y.—*Corn Planter.*—March 7, 1865.—This invention consists in an arrangement of devices indicated in the claim, and will be understood by reference to the engraving.

Claim.—The peculiar A-shaped harrow, or its equivalent, with the ploughshare F, the converging covers *l*, the peculiar placing of the share, flexible tube, and coverers, together with the arms *k* and *j* and cross-piece *k*, as attached; the whole constructed and described as and for the uses and purposes herein stated.

No. 46,739.—AMOS WESTCOTT, Syracuse, N. Y.—*Churn.*—March 7, 1865.—In this invention the end of the horizontal dasher-shaft passes through a funnel-shaped box filled with suitable packing, and is secured by a screw passing through from the outside. The crank is detachable, and can be used with either gear or pinion wheel. Air is introduced through an opening in the cover, by a blade of the dasher passing closely over the inner side of the opening, thus creating a draft.

Claim.—First, the use of the funnel-shaped box T, figure 5, with the method of packing the same, essentially as above described, in combination with the rectangular bars H, the body of the churn, and the shaft and dasher paddles, as above described.

Second, the method of attaching and securing the shaft I, figure 3, in the body of the churn, as above described, in combination with the body, rectangular bar, pinion wheel, and shaft, as above described.

Third, the method of introducing air into the body of the churn, essentially as above described, in combination with the shaft and dasher, paddles, body, and rectangular bar, as above described.

No. 46,740.—AMOS WESTCOTT, Syracuse, N. Y.—*Bolts for Doors.*—March 7, 1865.—This invention relates to a mortise bolt operated through the instrumentality of a knob, and otherwise of a construction similar to that patented to the said Westcott June 2, 1857. The knob arbor passes through a horizontal slot in the bolt and carries a small cog wheel at its inner end, which gears with a series of pins projecting from the face of the bolt, and by means of which the bolt is either projected or retracted on turning the knob. In the present instance the shank has a slight end play, and a spiral spring arranged around it, bearing against the escutcheon on one side and a collar upon the arbor, which bears, by virtue of said spring, against the face of the bolt, serves to force a shoulder on said collar into one or the other of two depressions formed in the bolt, one, namely, at each end of the slot, and thus lock the bolt, whether the same be in a projected or retracted position. In order to operate the bolt the knob must be slightly drawn upon until the shoulder has been released from the recess in the bolt.

Claim.—First, the method of fastening the bolt, when the same is thrown out, and also when it is drawn back, substantially as above described.

Second, the use of the spiral spring, or other similar device, in combination with the projection *a*, figure 2, and the holes in the side of the bolt, substantially as and for the purpose above described.

No. 46,741.—JAY WHEELOCK, San Francisco, Cal.—*Animal Trap.*—March 7, 1865.—In this invention the trap door, upon which the animal rests in trying to get at the bait, forms one of the radial wings of a revolving wheel. The bait is beyond in a hinged box, which can open. To get at it, the animal must push aside a bar with its nose or feet. In doing so this hinged bar (retained in its normal condition by a spring) acts as a trigger, through a projection on it, passing under the radial trap. When pushed aside, the animal falls in a box below and the trap is reset.

Claim.—The lever G, provided with the plate H and spring I, in combination with the slot *e* in the partition F, and the revolving platforms C, all arranged in connection with the box or animal receptacle A, to operate substantially as and for the purpose specified.

Also, the bait box E, connected to the box or animal receptacle A, and arranged in relation with the lever G, partition F, and revolving platforms C, substantially as and for the purpose set forth.

No. 46,742.—JOHN H. WHITNEY, Sandisfield, Mass.—*Ox Yoke.*—March 7, 1865.—This invention consists in the application to an ox yoke of a fulcrum and thumb screw, whereby a short or long leverage is given to the bow blocks by the former, and by tightening or loosening the thumb screw the blocks are held in any desired position.

Claim.—The adjustable fulcrum screw D and the thumb screw E, in combination with the bow slides H, as and for the purposes set forth.

No. 46,743.—E. A. Williams, Columbus, Ohio.—*Sugar-cane Mills.*—March 7, 1865.—This invention consists in so constructing the bottom plate of the machine that the juice expressed from stalks will flow directly off into troughs, said troughs being provided with one or more screens in such manner that the juice flowing into them will be deprived of the cane, trash, &c. Self-adjusting guides, provided with flanges or plates, extend into close proximity with the feed or crushing rollers, in such manner as to prevent the juice from being ejected from the mill by the pressure of said rollers. The central portion of this device is made flexible in order to accommodate itself to the cane which is passing through it.

Claim.—First, the application of one or more screens to the troughs or side conduits of the bottom plate of a cane mill, in such a manner that the juice flowing over the angles formed by the said plate and the troughs into the troughs *b b'* will be deprived of cane trash, substantially as described.

Second, the flaring spring guides J J, in combination with the side fenders G G, substantially as described.

Third, the combination of the bottom plate with side troughs, crushing rollers partly overhanging the troughs and the screens, substantially as and for the purpose set forth.

Fourth, providing for the removal of the cane trash from both ends of the crushing rollers when the top and bottom plates of the mill are brought in close proximity to the ends of said rollers, substantially as described.

Fifth, the arrangement of guides and fenders, as described, or their equivalents, directly over the front trough *b*, substantially as described.

No. 46,744.—Horace G. Williams, Hamilton, Iowa.—*Self-rocking Cradle.*—March 7, 1865.—This invention relates to an arrangement for operating a child's cradle and fan at the same time, whereby the use of the hand or foot for that purpose is entirely avoided, and the cradle rendered capable of being rocked with greater or less speed, as may be desired.

Claim.—The operating of a cradle A, and fan if desired, through the medium of a weight F, or an equivalent spring, an ordinary clock movement and rocking pallet bar Q, with its upright R, engaging with the forked bar S of the cradle, in combination with the counterpoise, laterally adjustable, weighted bar T, substantially as described and represented.

No. 46,745.—Riley P. Wilson, New York, N. Y.—*Roasting and Desulphurizing Ores.*—March 7, 1865.—This invention consists of a series of fixed horizontal clay retorts, arranged in a furnace with a feeder, with flanges made of copper or gun metal. The ore is fed in at the hopper, and moved so as to pass successively through the retorts. A stream of salt water, with steam, enters from a vessel containing salt water. The ore is discharged from the retorts into the amalgamator with stirrers. The waste gases from the retort are also discharged beneath the surface of the water. The steam generated by the hot ore falling into the water rises through a pipe to the retorts.

Claim.—First, fire-clay retorts A, in combination with conveyers C, as a whole or in sections, for the purpose of desulphurizing gold, silver, and other metalliferous bearing ores.

Second, the construction of a furnace in such manner that a series of clay retorts A may be placed in a horizontal position side by side, or one above the other, so that the desulphurized ores may be conveyed back and forth during the process of calcination.

Third, the hollow shaft C, in combination with the retorts A, as shown herein.

Fourth, the flanges or wings K, of the conveyers as adjusted to the shaft, for the use and purpose herein stated.

Fifth, the use and application of copper or gun metal, or its equivalent, both for a sheathing for the shafts of the retorts, as also for the flanges or wings K.

Sixth, the introduction of a jet of steam into the retorts, in combination with the air; also the box or vessel J, containing the salt or brine, substantially for the uses and purposes herein described.

Seventh, the use of a receiving vessel or vat G, in combination with the mullers or stirrers *g*, into which the desulphurized ores collect—said vat being partly filled with water, having a flue or pipe for the egress of the steam into the furnace; a faucet *j*, for the extraction of surplus water; a syphon *i*, for the discharge of the debris or refuse material; and the faucet *h*, for drawing the amalgam.

No. 46,746.—Adam Worley, Saint Paul, Minn.—*Twin Wood Stove.*—March 7, 1865.—In this stove the inner cylinder constitutes the fire chamber; a curved pipe with a flaring mouth opening near the closed top of the cylinder conveys the products of combustion to an annular chamber between the inner and outer casing of a receiver constructed externally like the heater—these products of combustion circulate up and down about the receiver, and pass off at an exit pipe. Air circulates from the floor up through an annular chamber in the heater between the inner cylinder and outer casing; also through the inner cylinder in the receiver. This heated air can be carried by suitable pipes in the top of the heater and receiver to warm upper rooms.

Claim.—First, the convexo-concave plate C, and curved or elbow pipe *d*, in combination with the inner or fire cylinder B, substantially in the manner and for the purpose herein described.

Second, the curved or bent partitions *c c* in the receiver, in combination with the inner cylinder D, and outer one A′, substantially in the manner and for the purpose herein described.

Third, the combination of the stove A with the receiver A′, when used with their interior arrangements as described, substantially in the manner and for the purpose herein set forth

No. 46,747.—THOMAS H. WORRAL, Manchester, N. H.—*Self-centring Chuck.*—March 7, 1865.—In this device the holding wedge-shaped jaws move with their inner holding edges parallel to each other, and to the centre of the chuck in slots or ways cut in the face, or end of the face-plate, commencing near the periphery, with an inclination towards the centre corresponding to the outer edges of the jaw. A cap-shaped nut or cap having an opening in its centre by being screwed upon the pan-plate impinges against the outer ends of the jaws, and forces them towards the centre, clamping the object to be held firmly between them.

Claim.—The wedge-shaped jaws *b*, and corresponding ways *a*, in combination with the spring slide *d* and cap B, constructed and operating substantially as and for the purpose set forth.

No. 46,748.—HENRY ZAHN, New York, N. Y.—*Lamp Shade.*—March 7, 1865.—This invention consists in suspending the metal ring which supports the shade, by means of strap hooks, from the top edge of the chimney of the lamp, so that the said ring will not come in contact with the glass.

Claim.—Suspending the shade of a lamp from the top edge of the cylinder by means of hooks or straps *a*, or by any other equivalent means, substantially as and for the purposes herein shown and described.

No. 46,749.—JOHN AIKEN, assignor to ERASTUS WILKINS, Warner, N. H.—March 7, 1865.—*Churn.*—This invention consists in the employment of two standards attached to the body of a churn, and having placed across the top and near the top thereof a cross-bar fitted oosely in the standards and operated by a lever, having attached thereto, by a swivel-joint, an adjustable connecting rod and dasher. By the movement of the lever backwards and forwards the dasher is thrown up at an angle at one side, and *vice versa.*

Claim.—The combination in a churn of the rocking shaft B, vibrating lever C, and adjustable connecting rod D, attached to the lever by a swivel-joint, and to the dasher by a rigid joint, in the manner and for the purpose above described.

No. 46,750.—SAMUEL C. BISHOP, assignor to the BISHOP GUTTA-PERCHA COMPANY, New York, N. Y.—*Composition for Insulating Telegraph Wires.*—March 7, 1865.—This invention consists in a composition of gutta-percha, paraffine, wheat flour, and resin; or gutta-percha, paraffine, white oxide of zinc, catechu of similar material, and gelatine.

Claim.—A composition for insulating telegraph wire, consisting of gutta-percha or India-rubber and paraffine mixed with either resin and wheat flour, or with a tannate of gelatine and white oxide of zinc, substantially in the manner and about in the proportion herein set forth.

No. 46,751.—CHARLES BRADFIELD, assignor to himself and PAUL SWENSON, Newark, N. J.—*Clothes and Hat Rack.*—March 7, 1865.—This invention consists of a clothes or hat rack in which there are two rails inserted in a metal socket without fastenings, so as to be removable, the hooks being so formed that their shanks fit between the rails, and can be made to slide along between them to any desired position.

Claim.—First, the combination of the escutcheons *b* and *d*, connecting bar *c*, the whole constituting a shank for the attachment of the hook D, in the manner explained.

Second, in combination with a hook constructed as above specified, the bars A B, and divided sockets C C, constructed, arranged, and employed as described.

No. 46,752.—S. W. HAMMON, assignor to himself, JOSEPH H. LINCOLN, S. LINCOLN, and A. P. HAMMON, Montford, Wis.—*Corn Plough.*—March 7, 1865.—In this machine the frame is composed of two semicircular frames, through the centre of which extends the draught pole; the axle is connected to the draught pole by a pivot bolt. The frames turn on the axle by means of toothed segments, worked by a foot lever. The plough points are attached to the standards by a pivot secured by a nut at its rear end, and they can be adjusted at any angle laterally. The front half of the frame carrying the plough is elevated by a hand lever, which operates two toothed segments.

Claim.—First, the two semicircular frames B C, applied to the draught pole D, in the manner substantially as shown to form the main frame of the machine.

Second, the axle A, connected to the draught pole D, by the pivot bolt *a′*, in the manner as shown, or in any equivalent way, to operate as herein described.

Third, the toothed segments C C, arranged as shown in combination with the shaft F, and bar H, for the purpose of moving or adjusting the axle A, as set forth.

Fourth, the attaching of the ploughs T, to the standards S, by means of the stems *h*, fitted in bearings *i*, the former being provided with nuts *j*, and all arranged substantially as described.

Fifth, the method of adjusting and holding the frame *k*, by means of the toothed segment N, segment bar M, and lever Q, all arranged substantially as set forth.

No. 46,753.—Jonas Higbee, Northport, N. S., assignor to himself and Joseph B. Denton, Newton, N. S.—*Rudders.*—March 7, 1865.—In this invention the rudders are as segments of a circle of 90°, and are suspended where the radii meet at the centre of the circle, if the circle was completed. These turn, one at the bow, another at the stern, on the point of suspension; and the fore and aft rudders, by the action of the water, adjust themselves to each other, and then are operated in the usual manner. The rudders have what are called fins; that is, radial ribs or projections on their surfaces.

Claim.—The hinged segmental rudders B B′, provided with fins *a a′*, and applied in combination with the posts C C′, in the manner and for the purposes substantially as herein shown and described.

No. 46,754.—Samuel Holt, Newark, N. J., assignor to C. A. Bulkley, New York, N. Y.—*Loom for Weaving Plush, or Piled Fabric.*—March 7, 1865.—In this invention the loom for weaving two pieces of fabric, connected by an intervening pile, can be operated by power, and the usual Jacquard mechanism dispensed with.

Claim.—First, the levers *k l*, attached to the heddles, as specified, in combination with the tappets *f g h*, and levers *i m n*, to actuate the warps in the manner set forth, for weaving two pieces of cloth with the pile between, substantially as specified.

Second, the arrangement of the wheel *v*, drum *w*, levers *x*, and tappets *y*, for actuating the centre knife *r*, by means of the cord or strap *t*, as specified.

No. 46,755.—Josiah Kilmer, Barnesville, N. Y., assignor to himself and August Kilmer.—*Plough.*—March 7, 1865.—This invention consists in the application of a regulator, in combination with the drag chain, in such a manner that the position of the chain can be adjusted instantaneously, according to the force required to throw the stalks, &c., under.

Claim.—A regulator R, to be employed in combination with the drag chain C, in the manner and for the purposes set forth.

No. 46.756.—Thomas J. Lovegrove, assignor to himself and Henry Baldwin, Jr., Philadelphia, Penn.—*Sand Pump for Artesian Well.*—March 7, 1865.—In this invention a barrel is formed with a small interior concentric tube, held in position by a septum at its centre. which divides the barrel into two equal chambers, the interior tube not extending quite to the top or bottom of the barrel. The bottom of the barrel contains a plug, with a trumpet-shaped opening therein. Upon the interior opening of this plug a ball valve is seated, and confined by a circle of pins and projections from the lower end of the small interior tube. The upper end of the barrel has attached to it a rod or handle, by which the barrel is to be raised and lowered; also a flexible tube through which the sand and water are to pass upward. The slack of this tube is arranged in coils, only a small portion of which has to be lifted in operating the pump.

Claim.—First, an air chamber, connected to and vibrated with a sand pump, substantially in the manner described, for the purpose set forth.

Second, a chamber connected to and vibrated with a sand pump, to receive the heaviest portion of the detritus passing through the pump.

Third, the combination with a vibrating sand pump of a flexible and extensible hose or discharge pipe, for the purpose of accommodating the movements of the pipe to those of the pump, without lifting the weight of the pipe at every stroke of the pump.

Fourth, the combination in a sand pump of an air chamber next the valve, with a sand chamber above the air chamber.

Fifth, the combination with a sand pump of a sand chamber, having an induction pipe projecting above its bottom, substantially as described, to relieve the induction valve from the weight of the detritus, as set forth.

Sixth, the combination in a sand pump of an air chamber and conducting pipe with a sand chamber, when so arranged that the eduction pipe of the air chamber forms the induction pipe of the sand chamber.

Seventh, the combination in a sand pump of an air chamber, a valve, a conducting pipe, a sand chamber, and a discharge pipe.

No. 46,757.—Thomas J. Lovegrove, assignor to himself and Henry Baldwin, Jr., Philadelphia, Penn.—*Rock Drill.*—March 7, 1865.—This invention consists in a rock drill having its cutting edges sloped from the centre to the side, forming a concave edge, and with more cutting edges on one side than the other, so that the stroke of the drill will tend towards one side, and thus make a hole larger than itself. The rock drill has a chamber on its face, bounded by cutting edges, so as to cut lines transverse to the circle described by the drill, and bisecting each other. It has also one cutting edge on one side of its centre, and three or more cutting edges on the opposite side. It is provided with a chamber on its face, surrounded by cutting edges, and a channel leading from the face to the head of the drill, to receive the chips, and remove them as soon as made, so that a clean surface will be constantly presented to the action of the drill. Combined with a perforated rock drill is a flexible and extensible discharge pipe to conduct away the debris and accommodate itself to the vertical movements of the drill; and, combined with the perforated rock drill is a valve, with a flexible discharge pipe.

Claim.—First, a rock drill, having its cutting edges sloped with the centre to the circumference, and with more cutting edges on one side than on the other, so that the stroke of the drill will tend to force the drill to one side, and thus make a hole larger than the drill, substantially in the manner described.

Second, a rock drill having a chamber or concavity in its face, surrounded by polygonal cutting edges, substantially in the manner described, for the purpose set forth.

Third, a rock drill having one cutting edge on one side, three or more cutting edges on the other, substantially in the manner described, for the purpose of cutting both radial and transverse lines as set forth.

Fourth, a rock drill having a chamber on its face, surrounded by cutting edges, substantially as described, and a channel leading therefrom to the head of the drill, for the purpose of cleaning away the chip at every stroke of the drill, and thus leaving a clear surface to operate upon.

Fifth, the combination of a perforated drill with a flexible hose or discharge pipe, substantially as and for the purpose set forth.

Sixth, the combination of a perforated drill, a valve, and a flexible hose, substantially in the manner and for the purpose described.

No. 46,758.—J. C. MORGAN, assignor to WILLIAM A. NIXON and E. S. EVERHARD, Alliance, Ohio.—*Machine for Cutting Keyseats.*—March 7, 1865.—In this device a longitudinally slotted mandrel of suitable size is inserted in the eye of the pulley or wheel to be cut. This mandrel is inserted in a socket, attached to an upright standard or frame, through the lower part of which is the driving wheel shaft, carrying on its inner end a crank which, by means of a connecting rod, operates a vertical saw or cutter, inverted and playing in the slot in the mandrel with its teeth outwards, and which is fed against that portion of the eye to be cut, by means of screws in the upper and lower ends of the mandrel pressing against the back of the saw or cutter.

Claim.—First, chucking the piece of work, while the keyseat is being cut to a slotted mandrel, which may be fixed or movable, substantially as set forth.

Second, providing the mandrel with a slot, substantially as described, so as to allow the saw to pass through it.

Third, the set screws or guides a' a', applied in combination with the socket C, mandrel D, and saw E, substantially as and for the purpose set forth.

Fourth, the knuckle i, and shoe k, applied in combination with the slide n, feed screw f, and saw E, substantially as and for the purpose described.

No. 46,759.—S. J. PARMLEE, assignor to PARMLEE PIANO COMPANY.—New Haven, Conn.—*Pianoforte.*—March 7, 1865.—This invention consists of an iron frame, holding the sound-board independent of the outer case, so that it may be readily removed, entire.

Claim.—First, the entire isolation of both the metallic frame and sounding board, in the manner and for the purpose substantially as specified.

Second, combining and uniting the sounding board with the frame, substantially as and for the purpose specified.

No. 46,760.—GEORGE SHOVE, assignor to himself and CHARLES THACHER.—Yarmouth, Mass.—*Cranberry Gatherer.*—March 7, 1865.—This instrument consists of a bottom and two sides, which are provided with fingers that are thrust into the vine below the berries. A duplicate set of fingers rest upon the bottom, which are so arranged that they can be raised while the bottom is pressed upon the ground, and the berries thus stripped from the vines, and deposited in a receptacle provided therefor.

Claim.—The arrangement and combination of the lifting comb B, in the manner substantially as described, with the receiver A, provided with teeth, as explained.

Also, the combination of the partition b, with the toothed receiver A, and the lifting comb B, arranged so as to operate together, substantially as described.

Also, the arrangement of the handle of the lifting comb at an inclination as described, with the comb, when such comb is disposed with a toothed receiver, substantially in manner as set forth, the purpose of such arrangement being to cause the comb while being raised upward to be tilted backward so as to discharge the berries into the space in rear of the partition of the receiver.

No. 46,761.—JAMES M. THOMAS, Stoneham, Mass., and SETH D. TRIPP, Lynn, Mass., assignors to S. D. TRIPP, Lynn, Mass.—*Heel Polishing Machine.*—March 7, 1865.—This invention consists in providing two or more grinding or polishing wheels, which slide upon their shaft, and so are brought opposite to the holding devices; and in the application of air for cooling the polishing wheels.

Claim.—First, the rocking plate L, in combination with the supports of the rotating disk J, substantially as above described.

Second, the adjustable arm M, and spring N, in combination with the frame K, which holds the rocking plate, substantially as above described.

Third, operating the disk J and its supports I H by means of the treadle C, and spring D, substantially as described.

Fourth, cooling the polishing wheels of machines for polishing the heels of boots and shoes, by application of a blast of air to the same, substantially as and for the purpose above described.

Fifth, the combination in machines for polishing the heels of boots of a grinding and polishing wheel upon the same shaft substantially as above described.

No. 46,762.—TIMOTHY TUFTS, Somerville, Mass., assignor to J. H. W. PAGE, Boston, Mass.—*Repeating Cannon.*—March 7, 1865.—Behind the barrel there is a revolving cylinder, bored radially to contain the charges, and is loaded by hand. It is rotated by a lever, and this same lever operates to release the hammer, fire the piece, and feed automatically the Maynard primer, and also lock the cylinder when in position for firing. Suitable means for vertical and lateral adjustment are attached by a new combination of parts.

Claim.—The combination composed of machinery for imparting to the magazine its intermittent rotary motion—machinery for stopping the magazine when a charge chamber may be brought in line and in communication with the barrel—machinery for releasing at the proper time the stopping mechanism of the magazine, in order to enable the rotation of the magazine to be effected—machinery for elevating the hammer—machinery for holding the hammer at cock—machinery for discharging the hammer, and, finally, machinery for advancing the priming ribbon, and operated by the reciprocating movements of a hand lever or brake, arranged and applied with respect to the stock, substantially as specified.

Also, the application of the stock to the axle and the carriage, by a compound joint (as described) in combination with the vertical and horizontal screws and their blocks, the whole being substantially as and for the purpose specified.

Also, in combination with the barrel, the stock, and the magazine, and the boxes of its journals, a mechanism substantially as described, for moving the said boxes so as to maintain the periphery of the magazine in its proper relation to the breech of the barrel.

No. 46,763.—JOHN G. VALENTINE, assignor to himself and R. H. ISBELL, Naugatuck, Conn.—*Machine for Planing Buttons.*—March 7, 1865.—This invention consists of a revolving cutter head, carrying a series of cutters, in combination with a sliding clamp, the same opening automatically, whenever it reaches the rear end of its stroke, to allow the removal of the button.

Claim.—First, the use of a series of cutters F F in a rotary head E, to operate in combination with a clamp G secured to a reciprocating slide H, in the manner and for the the purpose substantially as herein set forth.

Second, the springs *f*, studs *g*, and abutment *h*, applied in combination with the movable jaw of the clamp, and with the reciprocating slide H, substantially as and for the purpose described.

No. 46,764.—J. H. WILLIAMSON, assignor to himself and LEVI BEEMER, Branchville, N. J.—*Submerged Pump.*—March 7, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—The tubular post or standard A, with the two pump cylinders B B permanently attached with valves *b* at their upper parts, in connection with the reciprocating yokes D D, provided with the tubular pistons F F, having valves *f* at their upper ends; all arranged to operate in the manner substantially as and for the purpose herein set forth.

No. 46,765.—WILLIAM P. ADAMS and HENRY A. ADAMS, Norwich, Conn.—*Radiator for Stoves.*—Reissued March 14, 1865.—This invention consists of two drums communicating with each other by two upright pipes. The main pipe from the stove passes nearly midway between the drums, and from it a pipe communicates with the upper, and another with the lower drum. A direct draft may be had through the main pipe opening and closing the proper damper, or the draft can be made to circulate through the drums and communicating pipes.

Claim.—The two drums A A′ and pipes C D E E and B, combined and arranged in connection with the damper F, and applied to a stove, to operate in the manner substantially as and for the purpose herein set forth.

No. 46,766.—HIRAM ALLEN, Jr., Wallingford, Conn.—*Churns.*—March 14, 1865.—In this churn there are two sets of beaters, so connected by cog gears that they may be rotated in either direction or in concert. The beaters are provided with oblique flukes for the purpose of more thoroughly operating upon the cream.

Claim.—The combination of flukes *a* and *c* with beaters B and C, when constructed and arranged substantially as herein set forth, so as to revolve in either the same or opposite directions.

No. 46,767.—LOUIS PAUL ANGENARD, New York, N. Y.—*Method of Coating Glass with Platinum.*—March 14, 1865.—This invention consists in dissolving pure platinum in a mixture of nitric and hydrochloric acids and evaporating the solution to dryness. The salt

thus obtained is reduced to powder and divided into two portions, the first of which is dissolved in oil of lavender, and a small quantity of asphaltum added to the solution; this is brushed over the surface of the glass, and the glass subjected to heat until it assumes a dark red color, when it is allowed to cool and is ready for the second operation. The second portion of the platinum is then dissolved in ether and evaporated to dryness, after which it is dissolved in the oil of lavender and applied to the previous coating, and the glass treated as before.

Claim.—The improved method or process of preparing and applying a solution of platina, as herein before substantially described, as a coating for the surface of glass or other articles for making mirrors and articles for use and ornament, as an improvement on my patent of the 31st January, 1865, for a like purpose.

No. 46,768.—JOHN B. ATWATER, Chicago, Ill.—*Plough.*—March 14, 1865.—In this invention two parallel rotating augers are operated upon shafts turned by cog wheels upon the inside of the rear draught wheels. In the rear of, and in a line with, the auger points are turning shares. The frame carrying the augers and shares is hinged at its rear arched ends to the axle. The whole frame is lifted by a treadle lever.

Claim.—First, the combination of one or more rotating augers with one or more turn ploughs and an adjustable swinging frame B, substantially as described.

Second, the employment of rotating augers upon a frame B that carries the plough A A′, and which is hinged at its rear arched ends to the rear supporting axle D, and suspended near its front end from the beam C, substantially as described.

Third, arranging the augers in a line with and over the points of the ploughs when both augers and ploughs are sustained beneath and by a vibrating frame, substantially as described.

No. 46,769.—NELSON H. BARBOUR, Auburn, N. Y.—*Carbonic Acid Engine.*—March 14, 1865.—This invention consists in the use of the expansive force of the vapor or gas derived from the evaporation of liquified carbonic acid and other gases, and retaining the whole or a considerable part of the expanded gas to be again liquified for subsequent use, when the same is done through devices and by a power independent of, and in addition to, that connected with its own expansive force. This is accomplished by having a reservoir on the locomotive, into which the gas is conducted after being exhausted from the cylinders, and in which it is retained until a station is reached where the liquified acid is prepared, when the gas is drawn from the reservoir and liquified by a separate set of machinery.

Claim.—The application of the expansive force of the vapor or gas derived from the evaporation of liquified carbonic acid and other gases, and retaining the whole or a considerable part of the expanded gas to be again liquified for subsequent use, when the same is done through devices and by a power and machinery independent of, or in addition to, that connected with its own expansive force, substantially in the manner shown and described.

No. 46,770.—JOHN A. BASSETT, Salem, Mass.—*Burner for Carburetted Air.*—March 14, 1865.—This invention consists in the application to an ordinary fish-tail burner of a collar or ring fitting around the top of the burner, and projecting a little above it, for the purpose of burning carburetted air, to be used in combination with a carburetter, patented by the applicant.

Claim.—The combination of the burner A with a carburetting apparatus used to produce an illuminating gas in the manner specified; the whole operating together for the purpose substantially as set forth.

No. 46,771.—JOHN A. BASSETT, Salem, Mass.—*Improved Apparatus for Carburetting Air.*—March 14, 1865.—This invention consists of a pump connected with the carburetting vessel by a pipe which extends above the level of the hydro-carbon oil. Around the outlet of the said pipe is arranged a series of concentric perforated partitions, covered on one side with porous woven material. The outer partition is perforated only below the level of the hydro-carbon, and the whole series is covered. The hydro-carbon is contained in the reservoir and is kept at a constant height in the carburetting vessel by means of a pipe and an air tube. The carburetted air is collectted in the upper part of the vessel and escapes through an outlet pipe to be burned. The supply of air is regulated by means of a lever and valve operated by the string connected with the upper part of the gas reservoir.

Claim.—First, the general arrangement of the apparatus, consisting of the several parts as shown and specified.

Second, the carburation of air or gases by the use of the concentric perforated cylinders with the fibrous covering, and partially immersed in the hydro-carbon liquid maintained at a uniform height, substantially as shown and described.

Third, the automatic regulation of the quantity of air to be admitted to the carburetter by means of the valve connected with and operated by the holder through the lever and cord, or their equivalents, when used for this purpose, as shown and specified.

No. 46,772.—PHILANDER H. BENEDICT, Syracuse, N. Y.—*Buttons.*—March 14, 1865.—This invention consists in forming the button with an enlarged circular base next to the cloth. A screw passes through the cloth into this shank. The head of this screw is of the

same diameter as the one on the button shank. Both these disks are concave next to the cloth, and the cloth is held by their peripheries.

Claim.—A button constructed with the parts *a b c d e f* and *g*, substantially as described.

No. 46,773.—JOHN BEVAN, New York, N. Y.—*Apparatus for Preventing Water Pipes from Bursting.*—March 14, 1865.—In one or more enlargements of the pipe an elastic ball is placed, and so caged as not to stop the flow; and continuously along the pipe a tube of like material is arranged. This ball and tube, or either of them, being filled with air will yield to the pressure of the water, whether from freezing or the regurgitation occasioned by a fitful flow.

Claim.—First, the elastic or flexible compressible water-tight ball E, placed within a suitable chamber D provided in a water pipe, substantially as and for the purpose herein specified.

Second, the closed elastic or flexible compressible water proof tube B, placed directly within and extending any suitable distance along the passage of water pipe A, substantially as and for the purpose herein set forth.

No. 46,774.—GEORGE W. BILLINGS, New York, N. Y.—*Preparation of Cloth and Vegetable Fibre for Bleaching.*—March 14, 1865; antedated February 27, 1865.—This invention consists in subjecting the cloth or fibre to fermentation, in a manner similar to that employed for setting and cleaning flax, hemp, &c., as previously patented to the same inventor.

Claim.—Subjecting the fabric to a fermenting operation previous to bleaching, substantially as and for the purposes specified.

No. 46,775.—DAVID T. BURRELL, Bridgewater, Mass.—*Lamp for Heating Curling-irons, &c.*—March 14, 1865.—At each end of a fluid lamp is a series of devices, so constructed that when the curling or other iron is placed on them, a cover, to which they are attached, is lifted from the wick-tube, extending the whole length of the lamp, the wick being lighted at the same time by the flame of a small burner close in front. When the iron is removed the cover falls.

Claim.—First, an apparatus for heating irons, &c., operating automatically, substantially as described and for the purposes specified.

Second, the arrangement and combination of the main and small wicks *c c* and *e e* and extinguisher *g g*, actuated so as to be raised and lowered by placing the iron or other implement upon or removing it from the apparatus, substantially as described.

No. 46,776.—GEORGE E. BURT, Harvard, Mass.—*Horse Rake.*—March 14, 1865.—This invention consists in so connecting the seat with the levers by which the rake teeth are raised that the weight of the driver assists in tilting the rake. It also consists in the manner of attaching the teeth arms to the cylinders which constitute the head of the rake.

Claim.—First, the combination of the seat J with the arms F F, and a rake constructed and arranged substantially in the manner specified, so that the weight of the operator will assist in operating the rake, substantially as described and for the purpose set forth.

Second, the arrangement and combination of the arms D, the gripe *x*, and cylinder *v*, constructed substantially as described for the purposes set forth.

No. 46,777.—W. J. CHEYNEY, Wallingford, Penn., and E. T. DIETERICHS, Philadelphia, Penn.—*Method of Consolidating Coal-dust, Peat, &c.*—March 14, 1865.—An alkaline silicate is mixed with as little alkali as possible with the materials, so as to form a pasty mass, which may be moulded.

Claim.—Consolidating particles of coal, peat, and similar substances, by mixing with the same an aqueous solution of silica, and drying and compressing the same, substantially as specified.

No. 46,778.—DAVID A. CLAY, Pittsfield, Mass.—*Governor.*—March 14, 1865.—This invention consists in providing a sliding yoke, which carries the mitre gears and clutches, by which the motion is communicated to the valve or gate, and combining it with a revolving clutch, that is actuated from the governor in such a manner that the yoke which is acted upon by the revolving clutch, acting through the clutches in the mitre wheel, has a motion endwise, which causes the stationary clutches, or those in the wheels, to separate from the revolving clutch as soon as an adjustment of the valve or gate has been effected, and thus the fluctuations common to this class of governors are sought to be avoided.

Claim.—First, communicating to the clutches, acted upon by a revolving clutch, a movement endwise, substantially as specified, so that said clutches will separate from the revolving clutch so soon as an adjustment of the cut-off, valve, or other regulating mechanism, has been effected as specified.

Second, the gears *m m o* and clutches *h q r*, in combination with a yoke *l*, moving endwise, in substantially the manner and for the purposes set forth.

Third, communicating to the yoke *l* an endwise movement by means of the nut and screw, actuated substantially as specified.

No. 46,779.—Benjamin Cole, Brooklyn, N. Y.—*Money Safe.*—March 14, 1865.—This invention consists of a reciprocating beam, so arranged that in dropping a piece of money through the aperture provided for the purpose, it is registered and shown by an index on the outside of the box.

Claim.—First, the application to a money safe of a reciprocating beam E, or other equivalent device, carrying on one end a penny or other coin or device, and operating in combination with the receiving spout B, and with one or more supplementary openings C, in the manner and for the purpose substantially as set forth.

Second, in combination with a money safe, the registering apparatus F, constructed substantially as described, so as to be operated by the act of introducing money, in the manner and for the purposes specified.

No. 46,780.—Moses G. Crane, Boston, Mass.—*File-cutting Machine.*—March 14, 1865.—In this machine there are arranged upon a table three circular cutting disks which bear upon the round file blank at three nearly opposite points on the circumference, being held up to it by strong springs; each disk also is free to rotate upon its own axis, and is set at such an angle of inclination that, as the blank which passes up between them from below is rotated, each of the three, sinking into its surface, will gradually draw the blank upwards until a spiral thread will be thrown up, reaching continuously from one end of the blank to the other.

Claim.—The manufacture of curvilinear surfaced files, with teeth which have the direction of screw threads, when these are thrown up as burrs from the surface of the file blanks and continuously and spirally around the same to substantially a uniform distance therefrom.

Also, in a file-cutting machine, the combination and arrangement of mechanism, substantially as described.

Also, the employment, in connection with a file blank cutter, of a gauge in such manner as to regulate the depth of the cut by contact with the uncut surface of the blank, and so as not to interfere with the burr or tooth raised by the cut, substantially as and for the purpose described.

Also, making such gauge adjustable with respect to the edge of the cutter, substantially as and for the purpose specified.

No. 46,781.—J. C. Crismar, Omaha City, Nebraska Territory.—*Sugar-cane Press.*—March 14, 1865.—This invention relates to an arrangement of the press box and plunger, whereby the contents of the said press box, after being subjected to the requisite pressure, may be emptied of the "cheese" or refuse with the greatest facility.

Claim.—The rising and falling frame C, in connection with the press box, composed of two parts I H, in combination with the fixed or stationary plunger J and shaft or windlass F, all arranged to operate substantially as and for the purpose herein set forth.

No. 46,782.—O. A. Dailey, Washington, D. C.—*Boxes for Hats and Bonnets.*—March 14, 1865.—This invention consists of a box made of ribs of metal or other suitable material, and covered with leather or cloth, the same being cylindrical or semi-cylindrical and arched at the top, so as to resist lateral and vertical pressure in the most effective manner.

Claim.—As a new article of manufacture, a box for hats or bonnets constructed with arched ribs or strips, as herein described.

No. 46,783.—J. H. Doughty, New York, N. Y.—*Blacking Box.*—March 14, 1865.—This invention consists in a blacking box or receiver, provided with a chamber or well, in which a plunger moves in such a manner that when the said well is filled with blacking by the action of the plunger a sufficient supply of blacking can be forced up above the bottom of the box at any moment.

Claim.—First, the employment of an elevator or driver C in combination with a receptacle for holding blacking, substantially as and for the purpose set forth.

Second, the well B, applied to a blacking box A, and provided with an elevator C, substantially as and for the purpose set forth.

Third, the pedestal D, in combination with the box A, well B, and elevator C, constructed and operating substantially as and for the purpose described.

No. 46,784.—Spencer B. Driggs, New York, N. Y.—*Running Gear of Railroad Cars.*—March 14, 1865.—The principal object of this invention is to enable railway trains to be run at the highest practicable speed with the same safety as at ordinary speed, and without the enormous increase of wear and tear of track and rolling stock which results from a high rate of speed with the running gear at present in use. It consists in a system of running gear and car connections whereby this desirable result is sought to be obtained.

Claim.—First, a compound flexible car truck, composed, substantially as herein described, of a main truck and one or more flexibly attached guide trucks, the wheels of the main truck supporting the weight, or the greater portion thereof, and the wheels of the guide truck or trucks serving to keep those of the main truck parallel with the track, as herein set forth.

Second, supporting the connected ends of two railway cars upon one flexible truck having supporting wheels and guide wheels, substantially as herein specified.

Third, the arrangement of a single supporting axle and pair of wheels, and a vertical coupling pin for connecting two cars, with the axis of the said pin in the same plane with the axis of the wheels and midway between the two wheels, substantially as herein described.

Fourth, the connection of the ends of two railway cars with each other and with one supporting truck by means of one pin, substantially as herein set forth.

Fifth, suspending the ends of two connected railway cars from one truck by means of chains, links, wire ropes, or other flexible connections attached to the cars at the extremities of the sides thereof, substantially as herein described.

Sixth, the connection of the supporting truck and guide truck or trucks of what is termed a flexible truck for railway cars by means of springs, by which a portion of the weight received by the main truck is transferred to the guide truck or trucks, substantially as herein specified.

Seventh, in combination with a truck for supporting the ends of two railway cars, the rollers *h h'* attached to the car bodies, and receiving between them the transoms of the truck, substantially as herein described.

No. 46,785.—Benjamin F. Dunning, Galesburg, Ill.—*Hay and Cotton Press.*—March 14, 1865.—This invention consists mainly in deriving the power used for the purpose of pressing with great force hay, cotton, wool, &c., from the falling of a heavy wedge between a suitable pair of followers, provided with friction rollers, and working in hay or cotton press boxes. The hay or cotton is pressed in successive sheets until the bale is completed, instead of applying the pressure to the whole bulk of the material. The feed arrangement admits of the hay or cotton being partially compressed, and then fed in sheets of certain required dimensions into the press boxes, so that sufficient material for one sheet receives, through the follower, the pressure of the fallen wedge, and, as the wedge rises and falls for another stroke, another sheet is fed into the press box in time for the second stroke, and so on until the desired number of sheets needed to form a bale are packed.

Claim.—First, the wedge I falling between followers C C, substantially in the manner and for the purposes specified.

Second, applying the pressure to the hay, &c., in successive sheets, when the sheets are fed in automatically, by means of a falling weight, or its equivalent, substantially as specified.

Third, the combination and arrangement of wheel N, swivel lever Q, dog *x*, thimble R, and shaft O, substantially in the manner and for the purposes described.

Fourth, the combination and arrangement of cap K, dog *t*, ratchet lever L, and levers S T and U, substantially in the manner and for the purposes specified.

Fifth, the feed rollars E and knives *i i*, constructed, arranged, and operating substantially in the manner and for the purposes specified.

Sixth, the triggers J J, when so constructed and arranged as to release the wedge so soon as it shall have given one revolution to the feed rollers, substantially in the manner and for the purposes specified.

No. 46,786.—Jethro J. Griffith, Philadelphia, Penn.—*Machine for Heading Dentists' Pins.*—March 14, 1865.—This invention consists in the employment of a double cam in connection with a system of levers and friction rollers, by means of which pressure is applied through a plunger to the pins to be headed. A friction wheel is kept in contact with the surface of the cam by means of a spring or weight. Two griping jaws are used, one which is stationary, and the other is fastened to a sliding piece, which is moved by one of the levers.

Claim.—The combination of the double cam E, the levers F and O, with their adjustable auxiliary levers and friction rollers, (or the described or other equivalents for the adjustable parts,) the sliding piece N, and jaws M M', in the manner and for the purpose substantially as described.

No. 46,787.—J. C. S. Fitspatrick, Kalamazoo, Mich.—*Time Indicator for Railroad Trains.*—March 14, 1865.—This invention consists of a time table composed of a series of dials with movable hands, one such dial being provided for every train, so that the indicators for each train designated shall be permanent and not requiring adjustment, except when changes are made in the time of starting. Combined with the above is a cipher for the purpose of indicating the suspensions of running of a train.

Claim.—First, a time table, consisting of a series of dials with movable hands, having one such dial for every train, so that the indicators for each train designated shall be permanent and not require adjustment except when changes are made in the time of starting, as herein above set forth.

Second, in combination with a time reporter, arranged as above specified, the employment of a cipher, in the manner above described, to indicate the suspensions of running of a train.

No. 46,788.—E. N. Foote, New England Village, Mass.—*Miniature Locket.*—March 14, 1865.—This invention consists of a locket in which is produced in miniature an imitation of a photographic album, with spaces for photographic and other pictures; the leaves or re-

ceptacles for the pictures and the outer sides of the locket being so attached to the body thereof as to be capable of opening wide to expose the picture to view.

Claim.—First, the photographic locket A, constructed and operated substantially as above described.

Second, securing the covers of the locket to the extensions *a a*, respectively, of the part D, of its back, substantially as above described.

Third, making the inner plate E of the back of the locket convex and rigid, and hanging the leaves I thereto at different elevations on its convexity, substantially as and for the purpose above described.

46,789.—PERRY G. GARDINER, New York, N. Y.—*Quartz Crusher.*—March 14, 1865.—This invention consists in the combination of a stationary mortar or kettle, of a partly spherical form in the interior, with a spherical concentrical ball operated by a diagonal shaft connected by means of an arm and forked joint and bush, with a vertical driving shaft. The ball, mortar, or basin is combined with the vertical hollow shaft, so that ores that are pulverized are carried down continuously, without intervals for charging or discharging, the falling ores being equally distributed on all sides of the ball and basin.

Claim.—First, the manner of combining and arranging a stationary mortar or kettle, of a partly spherical interior form, with a spherical concentrical ball operated by a diagonal shaft *d* connected with a vertical driving shaft by the arm F and the forked joint and bush *g g'*, operating in the manner and for the purposes described.

Second, combining and arranging the vertical hollow shaft E with the ball and basin or mortar D C, whereby the ores to be pulverized are carried down continuously, without intervals for charging and discharging, and so as to distribute the falling ores equally on all sides of the ball and basin.

Third, the peculiar form and structure, in two equal parts, of the cover or lid K, by which it can be placed over the kettle without disturbing the operating parts, and made to revolve with the shaft, and arranged upon the trough I, as described.

Fourth, the form and arrangement of the movable trough I, having its sides of unequal height, and its trough perforated and adapted and adjusted to the rim of the basin below and the revolving lid above, one to be used with or without water, as described.

46,790.—WILLIAM GASKILL, Cincinnati, Ohio.—*Hemming Gauge for Sewing Machines.*—March 14, 1865.—This invention consists in the employment of an adjustable perforated and shouldered tongue, which is adapted to rise and fall with the pressure foot of a sewing machine, in combination with an adjustable shouldered plate for the purpose of accurately gauging and neatly flattening the hem at the point and in the act of stitching.

Claim.—First, the adjustable perforated and shouldered tongue D, adapted to rise and fall with the pressure foot of a sewing machine, in combination with the adjustable shouldered plate A, for the purpose of accurately gaging and neatly flattening the hem at the point and in the act of stitching, as set forth.

Second, the parts A *a* B C *c c' c''* D *d* E F *f f'* and F', combined and co-operating in the manner stated.

46,791.—OBED GILDER, Kinsman, Ohio.—*Automatic Ratchet and Pawl.*—March 14, 1865.—The object of this invention is to prevent reverse motion of the shaft in sewing and other machines. It consists of an automatic ratchet and pawl, so arranged that, while the wheel to which the pawl is conected revolves in the proper direction, the pawl does not interfere with its motion; but the instant the wheel commences to turn in a contrary direction the pawl is made to engage with its ratchet, and the reverse motion prevented.

Claim.—The pivot C, the lever or break bar E, and break roller F, when the same are constructed as described in the aforesaid combination for the purposes set forth.

46,792.—J. H. GOULD, Cincinnati, Ohio.—*Blacksmith's Forge.*—March 14, 1865.—This invention consists of a sprinkling apparatus connected with a water tank in such a manner that water can be sprinkled at pleasure upon a forge fire for the purpose of economizing fuel, and of keeping the fire in good condition.

Claim.—First, the combination with a forge of the sprinkling apparatus O connected with a water tank *g*, or its equivalent, arranged and operated substantially as and for the purpose described.

Second, the combination of the sprinkling apparatus O, with the escape pipe of a water-back or water-tuyere of a forge arranged and operated substantially as and for the purpose above set forth.

No. 46,793.—C. E. GRAY, New York, N. Y.—*Rendering Apparatus.*—March 14, 1865.—This invention consists of a digester, with a man hole at the top and an aperture at the bottom, the said digester being so arranged that there shall be a space left under it in order that the contents may be withdrawn from the aperture. The space under the digester communicates with the fire chamber by means of a flue. Directly over the fire box is placed a receiver communicating with the digester by means of pipes. The receiver is provided with a coil at its bottom, the said coil communicating with a refrigerating coil, by means of which the lard may be cooled.

Claim.—First, rendering fatty matter under pressure generated in the digester containing the fat by the direct application of heat thereto.

Second, the combination of the digester with a heating chamber or furnace for the purpose of generating steam therein to render the fatty substance contained in the tank, substantially in the manner described.

Third, the combination of the receiver H with steam generating digester, so arranged in connection with said digester as to receive the melted fat therefrom, and so that the heat of the furnace used to generate the steam in the digester is accessible thereto for the supplemental operation of refining.

Fourth, refining and purifying the rendered fat in a reservoir arranged in connection with the digester and filled with a coil of pipe so arranged in said reservoir and connected to said digester as to receive the steam therefrom and return the condensed water there, substantially in the manner described.

Fifth, deodorizing the gases generated in rendering the fat or driven off in refining and purifying it by passing said gases through a deodorizing chamber, substantially in the manner described.

No. 46,794.—J. GREEN, Rochester, N. Y.—*Apparatus for Deodorizing Petroleum, Benzole, &c.*—March 14, 1865.—This invention consists of an air-tight receiver provided with a man hole. It is also provided with an air inlet and oil inlet, and an outlet by which the deodorized oil is discharged. On the top of the receiver is an exhaust pump. Within the receiver is an oil tank made in two compartments, which are separated by two perforated partitions. Over one of the partitions is a slide provided with similar perforations, by means of which communication may be cut off between the two chambers. In the upper chamber is situated a coiled pipe, by means of which the oil is heated. The lower chamber contains an agitator, and it is also provided with an oulet tube. At the top, opening into the receiver and in the top of the upper chamber, is an inlet opening from the receiver into the tank.

Claim.—The process of removing the existing gas of petroleum, benzole, naphtha, and other hydrocarbon liquids in vacuo, by means of the receiver A, tank B, and pump C, arranged and operating substantially as and for the purpose herein set forth.

Also, forming the tank into two compartments D D′, separated by the partitions E G and slide H, provided respectively with the holes and perforations *h h′ i*, the whole arranged, combined, and operating substantially as and for the purpose herein specified.

Also, the agitator K in combination with the vacuum tank B, receiver A, and exhaust pump C, arranged and operating substantially as herein specified.

No. 46,795.—THOMAS HANSBROW and B. B. REDDING, Sacramento, Cal.—*Hydrostatic Engine.*—March 14, 1865.—This invention consists in the application of air cushions to the cylinders of water pressure engines in such a manner that the water pressing against the piston is prevented from acting as a solid, and the engine is enabled to turn its centre easily and without jar. To accomplish this a small cylinder is applied to each end of the induction passage, which at its lower end communicates with such passage, and at the opposite end is supplied with a valve, which is closed and controlled by a spring in such a way that as the piston recedes from either end of the cylinder the valve opens and admits a quantity of air, and upon the piston being returned to that end of the cylinder it acts as a cushion, and also aids in expelling the water therefrom.

Claim.—First, the application of cushions to the cylinder of a water pressure engine, substantially as and for the purpose set forth.

Second, the air valves *e* applied in combination with the air cylinders I and main cylinder A, in the manner and for the purpose substantially as set forth.

Third, the vibratory beam M in combination with the rod *m*, adjustable tappets *b*, valves F K, and ports *a a′ b b′*, in the cylinder A, all constructed and operating in the manner and for the purpose substantially as specified.

No. 46,796.—HORACE HARRIS, Newark, N. J.—*Harness Snap.*—March 14, 1865; antedated March 1, 1865.—This invention consists in the mode of attaching the spring. The hook is made with lips thrown up at the sides. The rear end of the spring is corrugated and placed in the recess; the lips are then riveted down, holding the spring in position.

Claim.—The mode herein described of preparing the back end of the spring D, to be attached to the hook E, substantially in the manner specified.

No. 46,797.—L. M. HARRIS, Mattawan, Mich.—*Pruning Hook.*—March 14, 1865.—In this invention a crescent-shaped knife fastened to a slide works against a hook rigidly affixed to its staff.

Claim.—First, the use of a hook *b*, which is secured rigidly to its shaft *a*, in combination with a knife *c*, which slides upon the shaft *a*, and is moved upward in the act of cutting, substantially as described.

Second, the movable crescent-shaped knife *c* formed on a slide *d*, in combination with the hook *b*, which is secured rigidly to its haft, substantially as described.

No. 46,798.—JOHN G. and H. T HENDERSON, Salem, Iowa.—*Hand Loom.*—March 14, 1865.—The claim and drawing define the nature of the invention.

Claim.—First, so arranging a flexible strap that as the lay comes forward it will be drawn alternately from one side of the picker staff to the other, and as the lay goes back will throw the picker staff around and throw the shuttle back and forth as required, substantially as described.

Second, the combination of the shaft *f f*, ratchet *g*, and its pawl rod *r*, pins *i i i*, treadles *h h*, and stop *u*, for the purpose of elevating the upper shed as the lay comes forward, and retaining it until the shuttle is thrown, and the depressers *b b* placed on the swords for the purpose of taking the remaining treadles down as the lay goes backward, substantially as described.

No. 46,799.—ELIAS HOLLINGER, New Haven, Ind.—*Fence.*—March 14, 1865.—This invention consists in a mode of fastening the braces of the fence. The braces are applied singly to the ends and centres of the panels by means of links, battens, slots, and keys, and at the bottom they are fastened with pins.

Claim.—The braces B B′ applied singly to the ends and centres of the panels and secured by means of tanks A A′, battens *a a′*, slots *c c′*, keys *d d′*, and pins *e e′*, all arranged as herein specified.

No. 46,800.—CHARLES W. ISBELL, New York, N. Y.—*Steam Engine.*—March 14, 1865.—This invention consists in the arrangement of two vibrating pistons, which are placed within a sector-shaped cylinder having an interposed induction chamber common to both, in which valves are placed. The vibratory motion of the piston is transferred to the main shaft of the engine, which is located centrally between the two by means of cranks and connecting rods in such a manner as to give a continuous rotary motion to the shaft, from which power is taken to propel any other machinery.

Claim.—First, the two sector-shaped cylinders A A′ arranged side by side, in corresponding positions on opposite sides of a central plane, in which is arranged the axis of a crank shaft common to both, and with their vibrating pistons connected with a common crank on the side shaft, substantially as herein specified.

Second, in combination with the within described arrangement of two sector-shaped cylinders, vibrating pistons, and crank shaft, the interposed induction chamber common to both cylinders, substantially as herein described.

No. 46,801.—ALFRED IVORS, New York, N. Y.—*Globe for Fish.*—March 14, 1865.—The object of this invention is to supply fresh water without danger of overflowing the reservoir. It is attained by the use of a double chambered pipe entering the bottom, the interior pipe acting for the supply, and the outer pipe discharging the water. By means of valves the supply and discharge are kept equal.

Claim.—First, the supply pipe *g* and escape pipe *f*, constructed as specified, in combination with the overflow pipe *h* passing away from the pipe *f* and rising to the height of the water in said globe or vessel, as and for the purposes set forth.

Second, the pan *c* and pipe *d*, fitted as specified, in combination with the globe or vessel to contain fishes, for the purposes and as specified.

Third, a globe or other vessel arranged substantially as specified, so that the water may be maintained at a given height or caused to flow over the outside of said vessel, as set forth.

No. 46,802.—DAVID L. JAQUES, Hudson, Mich.—*Stove Lantern.*—March 14, 1865.—This invention consists in the combination of certain devices so arranged as to give out light, and also to warm the feet or other parts of the body.

Claim.—The whole device substantially as set forth.

No. 46,803.—J. H. JONES, Ironton, Ohio.—*Railroad Chair.*—March 14, 1865.—This invention relates to a mode of constructing a railroad chair, and has for its object to secure the ends of the rails so as to prevent their rising under the weight of the cars, and thereby avoid any battering of the ends of the rails, which it is very expensive to repair.

Claim.—Constructing the chair of two longitudinal parts B B′, one of which B′ extends up to the under side of the upper parts or tread *d* of the rails A A, and the other B′ extending up to the upper surface of the rails, both parts being provided with bases *a.* and so formed as to grasp the lower parts of the rails, in combination with the clamps C and bolts D, all arranged substantially as and for the purpose herein set forth.

No. 46,804.—XAVIER KARCHESKI, Bellville, New Jersey.—*Method of Preparing Colors from Aniline.*—March 14, 1865.—This invention consists in treating any white base of which the paint is to be made with gelatinous solutions before the application of the aniline solution. The white base is mixed with starch water, and to this is added a solution of tannic acid, and after these are thoroughly mixed the aniline solution is added.

Claim.—The application of gelatinous or fatty solution, vegetable or animal, such as starch, tannic acid, milk or glue, etc., in preparing paints from aniline.

No. 46,805.—W. H. KIMBALL, Lynn, Mass.—*Shanking Machine.*—March 14, 1865.—This invention consists in the arrangement of an angular knife, or cutter, in connection with feed-rolls and a guide in such a manner as to cut shoe-shanking of uniform width and triangular in section.

Claim.—The combination of the feed-rolls, angular knife and guide, when arranged to operate together, substantially as set forth.

No. 46,806.—GUIDO KUSTEL, Dayton, Nevada.—*Concentrating Table for Ore.*—March 14, 1865.—A strong frame carries two rollers on which is an endless apron. The frame may be adjusted to any desired inclination by means of an arm and set screws. One of the rollers is made to revolve by means of a wheel and screw, so as to cause the apron to revolve. The ore is to be fed on one side of the apron as it moves by a trough and openings. Water is distributed over the ore by pipes and faucets. The water washes off the lighter portions of the ore, and they fall into a box. The heavier matters are carried forward by the apron, or by the strong jet of water are carried into a box.

Claim.—First, the construction and use of a concentrating table, moving horizontally, and capable of having its inclination varied, when arranged in the manner and for the purpose substantially as specified.

Second, a horizontal moving concentrating table in combination with the feeding pipes or openings, *m m'* and *m''*, and the water tanks P P' and P'', as well as the water pipe *n*3, or their equivalent, the whole being arranged and operated in the manner and for the purpose substantially as specified.

No. 46,807.—NICHOLAS D. LE PELLEY, Cleveland, Ohio.—*Rudder.*—March 14, 1865.—This invention relates to two or more blades with valves in the water passages between the blades.

Claim.—A rudder constructed with two or more blades having water passages between them and valves, all arranged to operate in the manner substantially as and for the purpose set forth.

No. 46,808.—W. R. MAFFIT, Wilkesbarre, Penn.—*Joints for Pipes.*—March 14, 1865.—The object of this invention is to supersede the old method for making joints in pipes by the use of a wooden ring, prepared by proper machinery out of one solid piece if the ring is small, or out of a number of sections or staves when the ring is large, and applied to the spiggot end of the pipe in such a manner that by the expansion or swelling of the wood in the bell a tight joint is produced; and, furthermore, the compressibility of the wood allows the pipe to assume an angular position, or a position deviating from a right line, without producing leakage; or, if desired, the inner surface of the wooden ring may be more or less convex, to give the pipes a still better chance to assume an angular position.

Claim.—Connecting pipes in the manner and by the means described.

No. 46,809.—BENJAMIN G. MARTIN, Philadelphia, Penn.—*Mode of Obtaining Extracts.*—March 14, 1865.—This invention consists of a mash tub, provided with a tube which passes through a fire-box placed under the said mash tub. Within said tub there is a tank and casing, being perforated to the length of the top of the latter. The tank is surrounded by a jacket extending above the perforations, and is closed at the top and open at the bottom. In the bottom of the tub is a flat case into which steam can be admitted. The tank is provided with a hollow cover through which a current of water is kept constantly circulating. The cover has an opening in the centre provided with a suitable cover, and through the opening extends a conical chamber perforated and connected with a pipe through which hot water can be admitted. The tank may be raised out of the tub by means of ropes.

Claim.—First, separating the particles of a material of which a decoction is to be made by introducing into a body of the said material a current or currents of air, for the purpose specified.

Second, the perforated casing E, with its jacket E', combined with the tub A, and operating substantially as and for the purpose specified.

Third, the condensing casing or cover F combined with a mash tub A, substantially as and for the purpose set forth.

Fourth, the fermenting vat I, with its fasle bottom *k*, and pipes *m m*, or their equivalents.

No. 46,810.—DAVID MCCURDY, Ottawa, Ohio.—*Churn Dasher.*—March 14, 1865.—This invention consists in having the dasher perforated with a series of oblique holes, a certain number of which incline from the under surface of the dasher upward toward the dasher staff, the remaining holes inclining in a reverse direction.

Claim.—The cap C of an inverted funnel shape or an approximate form, when used in combination with a dasher provided with inclined openings *a b*, as and for the purpose specified.

No. 46,811.—WM. C. MCGILL, Cincinnati, Ohio.—*Windlass.*—March 14, 1865.—To the common windlass or grooved barrel there are attached a divider and a check pawl, which devices are designed to prevent the cable from fouling or its ends from overlapping.

Claim.—First, the divider D *d*, formed and adapted to operate substantially as set forth.

Second, in the described combination the grooved drum or barrel A *a* and divider D *d*, as and for the purpose specified.

Third, the combination of the divider D *d* and check pawl E, substantially as set forth.

No. 46,812.—W. MOREHEAD, Parkersburg, West Va.—*Extension Ladder.*—March 14, 1865.—This invention consists of a triangular ladder provided with guide ways through which a sliding ladder may be rapidly raised to its full or to any desired height, retained there firmly, and lowered with equal speed and security.

Claim.—The combination of the triangular ladder A, the sliding ladder B, the guides *k k*, and the latch E, constructed, arranged, and operating in the manner specified.

No. 46,813.—J. MOULTON, Boston, Mass.—*Drilling Machine.*—March 14, 1865.—This invention consists in the method of constructing the cutting edge of the drill, having for its object a more complete disintegration of the material to be cut than has been possible by the use of an ordinary drill, and also insuring its uniform wear at both centre and edges ; and also in causing an intermittent rotary motion to be given to the drill shaft. With the drilling mechanism is combined a pumping apparatus, so that water or other liquid can be ejected from the well by means of the up and down motion of the drill itself.

Claim.—First, constructing the cutting surface of the drill, with teeth arranged with regard to it and each other, as described, and for the purpose specified.

Second, the arrangement of devices for giving an intermittent rotary motion to the drill, operating as herein above described.

Third, combining with the drilling mechanism a pumping apparatus, operated by the head of the drill shaft itself, as described.

Fourth, giving the intermittent rotary motion to the drill shaft *u u* by devices inside of the tube or stock *o* as the latter is alternately lifted and depressed, "the drill shaft rising and falling within the stock."

No. 46,814.—M. D. MYERS, Ilion, Ill.—*Horse Hay Rake.*—March 14, 1865.—This invention consists in placing the spring bolt or catch which holds the forks from tilting within the crotch of the bail.

Claim.—Placing the spring bolt G, or its equivalent, within the crotch D, as and for the purpose specified.

No. 46,815.—CHARLES L. NOE, Bergen Point, N. J.—*Drill.*—March 14, 1865.—The object of this invention is to automatically effect the turning of a drill in operation by the act of raising the sinker bar or hammer for the repetition of the blows by which the drilling operation is performed ; and the invention consists in a mode of combining the drill or tool, or the stock thereof, with the sinker bar or hammer by means of a system of spiral grooves, whereby as the sinker bar is lifted it will turn the tool, or when the tool becomes imbedded in rock a short up-and-down motion of the sinker bar will completely free the tool.

Claim.—The tool or tool stock A, in combination with the sinker bar or hammer C and its interior arrangement of parts *b b* and *c c*, operating substantially as and for the purpose herein described.

No. 46,816.—J. W. NORCROSS, Middletown, Conn.—*Rowlock.*—March 14, 1865.—This invention consists in pivoting a rowlock to a plate so that no part of the joint will extend beneath the surface of the gunwale rail and necessitate the cutting away of the wood thereof; also, in applying wings to the rowlock, to be used for "wash-stroke" boats.

Claim.—First, pivoting a rowlock to a plate A, by means of a horizontally-turning joint, in such manner as to obviate the necessity of cutting away the gunwale rail to apply the rowlock, substantially as described.

Second, the use of wings or shutters in combination with a rowlock and the wash stroke of a boat, substantially as described.

Third, forming the wings F upon the horns of the rowlock, substantially as described.

Fourth, applying the spring *e e* directly to and beneath the plate A of the rowlock, substantially as described.

No. 46,817.—DANIEL F. PACKER, Redding, Conn.—*Soap.*—March 14, 1865.—This soap is composed of water, Glauber's salt, fresh burnt lime, alum, and crystal sal soda. These ingredients are boiled and then allowed to stand a certain time. The composition is then used to saponify grease, &c.

Claim.—A soap made and compounded substantially as above described.

No. 46,818.—JOHN A. PATTERSON, Statelick, Penn.—*Tubes for Caves in Oil or Other Wells.*—March 14, 1865.—The object of this invention is to adjust tubing to slips or caves in oil or other wells. Its novelty consists in the combination of an adjustable tube, elastic bands, springs, staves, and a tapered pin and collar.

Claim.—The adjustable tube A, elastic bands B B, in combination with the springs S S S, in the manner and for the purpose set forth.

Also, the follower or staves 1 2 3 4 in combination with the tapered pin and collar, in the manner and for the purpose set forth.

No. 46,819.—JOHN M. PERKIN and MARK H. HOUSE, Cleveland Ohio.—*Lamp.*—March 14, 1865.—This invention consists in attaching a toothed wheel to the end of the shaft which controls the wick and a segment of the collar of the lamp with holes, so that in unscrewing the burner from the reservoir the flame of the candle is necessarily extinguished, the object being to prevent explosion in filling the lamp.

Claim.—The wheel A and segment B, when arranged as specified, or their equivalent.

No. 46,820.—LOUIS PLANER, New York, N. Y.—*Machine for Cutting Tobacco.*—March 14, 1865.—This invention consists in the combination of a slotted crank working the feed roller, with a reversible pawl, and a piston head working in the pressing box.

Claim.—The combination of the slotted crank T, the connecting rod X, feed wheel M, nut T, feed lever N, reversible pawl P, fixed screw and piston rod I, with its piston head H, tobacco box A, and cutter B, arranged and operating substantially as and for the purposes herein described.

No. 46,821.—BERNARD REGAN, Miamisburg, Ohio.—*Grain Drill.*—March 14, 1865.—In this invention the seed box is provided with a winged feed wheel, having collars occupying recesses in the ends of the seed box, so as to be flush with the inner surface thereof.

Claim.—The provision in the seed box A of a scalloped or winged feed wheel B, having collars D D occupying recesses *a* in the ends of the seed box, so as to be flush with the inner surfaces thereof, substantially as and for the purpose set forth.

No. 46,822.—J. RENSHAW, Michigan City, Ind.—*Vise.*—March 14, 1865.—This invention consists in attaching to the face of the back jaw of the vise a segment-shaped bar, with the curved side against the jaw, and held thereto by being pivoted to a thin band of steel, which, passing over said jaw and down in the rear thereof, is hooked over a bead or projection formed thereon for that purpose.

Claim.—The adjustable vise chop, above described, consisting of the rocking plate and the steel clamp or holder *f*, in combination with the bead *j* of the back jaw of the vise, substantially as above set forth.

No. 46,823.—M. J. RICE and W. H. MILLEN, Boston, Mass.—*Journal Box.*—March 14, 1865.—This invention consists in the peculiar construction and arrangement of the lower half of the journal box with reference to an oil reservoir, and lubricating passages connected therewith.

Claim.—The combination of the oil reservoir *e*, movable bearing *b*, and oil passages *k*, arranged with respect to each other substantially as specified.

No. 46,824.—HENRY SEARL, Rochester, N. Y.—*Oil Ejector.*—March 14, 1865.—This invention consists in providing a reservoir which is placed near the bottom of the well, and is provided with a valve at its lower extremity. Communicating with the top of this reservoir is a pipe which conveys the steam from the top of the well. Leading into the reservoir, and extending nearly to the bottom thereof, is another pipe which has a valve in its lower end and within the reservoir. Above the surface of the ground are arranged cocks by which steam is admitted and forced down to the reservoir, which closes the valve in the lower end thereof and opens the one in the lower end of the ejection pipe and allows the oil contained in the reservoir to escape and be forced to the surface, when the steam is shut off and allowed to condense in the reservoir; the valve is then raised by the pressure of the atmosphere, and the reservoir is filled preparatory to a repetition of the operation. By opening two of the cocks and admitting steam, a current will be established through the instrument, and the well and its contents be heated to some extent, dependent upon the temperature of the steam well.

Claim.—First, the arrangement of the receiving chamber G in an oil well, or other deep well, when said chamber is connected with the surface or mouth of the well by means of the steam pipe H and the eduction pipe J, and when said receiving chamber is supplied with the induction valve T, and the eduction pipe J is supplied with a suitable valve S, all substantially in the manner and for the purpose herein set forth, but not intended to be understood as making any specific claim to the induction valve T in said pumping apparatus.

Second, the arrangement of the cocks M N O P and Q, in combination with the pipes H L and J, all operating in the manner and for the purpose substantially as herein described and represented.

No. 46,825.—JOHN C. SHACKLETON and GEORGE SHACKLETON, Lawrence, Mass.—*Steam Trap.*—March 14, 1865.—The object of this invention is to keep the water-discharge valve always immersed in water and below the float, and to admit of the operating of the air valve in the trap by means of the expansion of a copper rod. Its novelty consists in the combination and arrangement of the bottom of the steam trap of unequal height with the water-discharge valve, a float expansion rod, spring water discharge pipe, guide tube, and air valve.

Claim.—First, the bottom of steam traps of unequal height, so as to admit of a well at

one end and a water-discharge valve therein, so that the said valve shall remain immersed in the water of condensation while it is closed, substantially as described.

Second, the combination and arrangement of the air valve in the trap with the rod H and spring *j*, and causing the same to be operated by the expansion of the rod H and by the spring *j*, substantially as above described.

Third, the arrangement of the water-discharge pipe F, in combination with the guide tube *g* for guiding the valve E and the float C, substantially as above described.

Fourth, the arrangement of the water charge valve below the place of the float substantially as above described.

No. 46,826.—H. D. SMITH, New York, N. Y.—*Preparing Chewing Tobacco.*—March 14, 1865.—This invention consists in taking a quantity of fine-cut tobacco and encasing it in tobacco leaves, after which it is compressed into a solid sheet, the inside of which is composed of cut tobacco, and the outside, or coating, of tobacco leaves. It is then cut up into small pieces and put up in packages for use.

Claim.—A tobacco pellet or chew, made out of tobacco, incased and compressed between tobacco leaves, or their equivalent, as a new article of manufacture.

No. 46,827.—E. G. SQUIRES, Lima, N. Y.—*Apparatus for Training the Muscles in Writing.*—March 14, 1865.—This invention consists of a box, on which is a brass plate, with grooves in it, made in easy curves, in which a stile is guided, while the fingers and hands are held in specified positions.

Claim.—First, the combination of the form, consisting of the rods F G H and S, the spring thimbles X X, the roller P, and the balls R R, Fig. 1, with the grooved plate B, Fig. 1, and stile *c e*, Fig. 1, all operating in the manner and for the purpose substantially as herein described and represented.

Second, the combination of bars D H and G G and K K, Fig. 2, with the plates L and C, Fig. 2, the cog wheels M and N, Fig. 2 and the dials C and D, Fig. 1, all operating in the manner and for the purpose substantially as herein described and represented.

Third, the hinged plate *f* and point P, Fig. 3, in combination with the wires R R and T T, Fig. 3, to form a stile, substantially as herein described and represented.

No. 46,828.—EDWARD STABLER, Sandy Springs, Md.—*Magazine Fire-arm.*—March 14, 1865.—This invention is designed to check the feed of cartridges from the magazine to the chamber, when it is desired to use the arm as a simple breech-loader, supplied by hand. It is applicable only to that class of repeating arms which have the magazine in the stock, and the breech-pin or carrier pivoted so as to swing vertically, and it consists in the application of a stop or latch to the swinging breech-pin or carrier, so as to limit its oscillation to the point at which the communication is not opened between the magazine and the carrier.

Claim.—First, limiting or arresting the movement of the carrier block of a magazine gun at any desired point, for the purpose of converting the arm into a single loader, substantially as described.

Second, the stop *b*, or its equivalent, in combination with the carrier block of a magazine fire-arm, operating as and for the purpose herein set forth.

No. 46,829.—E. S. STEPHENS and H. E. GREEN, Pawtucket, R. I.—*Machine for Printing Yarn.*—March 14, 1865.—This invention consists in running the yarn to be printed between two fluted rollers, one of which is adjustable by means of set screws. These rollers are supplied with color by means of other rollers supplied from troughs properly arranged.

Claim.—The fluted rollers B B′, in combination with color rollers J J′ and distributing rollers L L′, or their equivalents, constructed and operating substantially as herein set forth, for the purpose of printing yarn simultaneously on both sides.

No. 46,830.—G. STONE and J. P. BULLOCK, Beloit, Wis.—*Harvester*—March 14, 1865.—This invention relates to the specific arrangement of means for raising and lowering the cutting apparatus, as explained by the claim.

Claim.—First, the curved arms G J, bell crank lever F *b*, and links C H, constructed as herein described, in combination with the caster wheels K L M N, crank shaft F I, and bar C, all arranged and employed in the manner and for the purposes specified.

Second, in combination with the above, the lever P, notched bar Q, shaft T, provided with the crank *k* and connecting rods O U, all arranged in connection with the main frame A and cutter or finger bar C, to operate as and for the purpose specified.

No. 46,831.—JAMES B. TALMADGE, Winsted, Conn.—*Apparatus for Railroad Car.*—March 14, 1865.—On top of a car a circular box, with which two mouth pieces of flaring shape are connected tangentially, holds a wind wheel moved by the draught caused by motion of the cars. In openings on opposite sides of the box are doors having a reciprocating motion by means of a connecting rod. From the wheel a shaft leads to a fan wheel in a box inside the car at one corner and near the roof. Air is drawn from the car into the box through a circular opening on top about the shaft, and forced out through an aperture in front of the box.

Claim.—First, producing a current and circulation of air in a railroad car by means of a fan wheel or blower, driven by a wind wheel on the outside, in the manner and for the purpose substantially as set forth.

Second, the self-adjusting apparatus, consisting of the upper box B and its wind wheel, its doors and vanes, and of the lower box D with its fan, constructed and combined substantially as above described.

Third, the method, substantially as above described, of constructing and operating the doors of the circular box O and the vanes which are connected thereto, so that they are automatic in their action.

No. 46,832.—T. B. THORPE, New York, N. Y.—*Combined Knife and Fork.*—March 14, 1865.—This invention consists of a combined pocket knife and fork, the handle being arranged in two parts, one holding the knife, the other the fork, so as to be disconnected and used separately. When combined the parts are held together by two hooks upon the knife part entering corresponding slots in the fork, and sliding sufficiently in a horizontal direction to take hold upon the edge of the slots on the inside of the fork handle. Shoulders are made upon the fork so as to shut against the back of the hooks to prevent disconnecting.

Claim.—A combined pocket knife and fork provided with separate parts or handles A B, having respectively hook projections E and slots F at their inner sides, in combination with notches *c* in the fork plate *a*, so arranged when the fork is closed to fit over or receive the hook projections F, and prevent the casual detachment of the parts, substantially as described.

No. 46,833.—EDSELL TOTMAN, Columbus, Pa.—*Sawing Machine.*—March 14, 1865.—This invention consists in so arranging the parts of a sawing machine as that the optional use of either a circular or reciprocating saw can be had for sawing logs and sticks of wood transversely with the grain, into blocks or stove lengths, and that it can be driven by any convenient power.

Claim.—The sawing machine hereinbefore described, consisting of the frame A, shaft C, pulleys N P, swinging frame Q, crank wheel H, pitman I, and saws R L, constructed and arranged as specified.

No. 46,834.—F. L. TRIPP, Prescott, Wis.—*Wagon Brake.*—March 14, 1865.—This invention consists in arranging the parts in such a manner that the wheels, when the wagon is backed, will be automatically relieved from the brake, the latter at the same time operating perfectly when the wagon is descending an eminence.

Claim.—The bar F and shoe or brake levers G G, connected with the rod I, in combination with the pawls J, and ratchets K, all arranged and applied to the wagon, substantially as and for the purpose herein set forth.

No. 46,835.—DON CARLOS TURNER, Madison, Wis.—*Machine for rushing Sugar-cane.*—March 14, 1865.—The nature and object of this invention will be understood from the claim and engraving.

Claim.—First, the stirrup L suspended from the fixed bearing of the upper roller, and sustaining the lower rollers in place in the act of pressing, and allowing them a free motion, and so arranged as to bind the rollers together, so as to confine the strain principally to the middle of the frame, substantially as herein set forth.

Second, in combination with the stirrup L, the yoke K and rollers C D and B, substantially as and for the purposes specified.

Third, in combination with the yoke K, provided with the rounded bearings *d d*, and with the rollers C B D the boxes I I, provided with transverse grooves *c c*, resting on said bearings of the yoke, the whole so arranged that the yoke is allowed to vibrate to open or close the rollers, and so that either one end or the other of the lower rollers may be depressed more than the opposite end, to allow any inequality to pass through, substantially as herein set forth.

Fourth, the spring *s* and block *h*, in combination with the yoke K and rollers C B D, arranged and operating substantially as described.

No. 46,836.—THOMAS VAN WAGONER, Newark, New Jersey.—*Skate.*—March 14, 1865.—This invention consists in the combination of a screw with a tightening nut holding together the bars at the middle thereof. Placed between the bed and runner at the ends of said bars there are two clamps on each side extending through slots on opposite sides of the heel of the skate and of the ball, respectively.

Claim.—The combination of the screw *g* and nut *h* with the bars C D, arms *c c d d*, slots *a* and claws *i i i i*, constructed as described, and employed for securing the skate at the front and heel simultaneously, as explained.

No. 46,837.—ENOCH WAITE, South Natick, Mass.—*Manufacture of Felted Fabrics.*—March 14, 1865.—This invention consists of a fabric composed of two separate sheets of felt connected together by a water-proof cement, and having a backing of India-rubber or similar material.

Claim.—The improved felt fabric, made of a backing and two sheets of felt, cemented together and arranged substantially as specified.

No. 46,838.—GEORGE I. WASHBURN, Worcester, Mass.—*Differential Lever.*—March 14, 1865.—The object of this invention is to provide a method of transmitting power, especially in cases of slotting or punching, where it is desirable to have an intermittent action at the will of the operator, and to any required extent, without stopping the driving machinery in the intervals.

Claim.—So constructing a combined lever A A′ that it may, by the projection of its parts, form a state of equilibrium, be made to communicate a reciprocating motion to a plunger or other mechanical appliance.

No. 46,839.—JOHN R. WHITTEMORE, Chicopee Falls, Mass.—*Straw Cutter.*—March 14, 1865.—This straw cutter is so constructed that the various parts of the castings can be put together without the use of machinery in fitting the parts together. The invention also relates to an arrangement of the parts of which the machine is composed.

Claim.—First, the combination of the knife C, mouthpiece B, shaft E, bolt *a*, key *c*, and piece F, when constructed, arranged, and operating substantially as described.

Second, securing the mouthpiece B to the hopper A by the pieces D D D, as described.

No. 46,840.—J. F. WILD, New York city.—*Button.*—March 14, 1865.—The shank passing through the cloth enters a large disk, the edges of which are turned from the cloth; a smaller disk, having a slot from its centre to its circumference to embrace and slide upon the shank, is let into the first gliding under a small head in the end of the shank. This small disk is concave on its under side, and is released to remove the button by pressing upon its convex side, and thus springing its edge out.

Claim.—The disks D E, and shank B, for fastening buttons, substantially as herein shown and described.

Also, the use of the disk C, in combination with the above parts, substantially as and for the purpose herein shown and described.

No. 46,841.—W. DEWEES WOOD, McKeesport, Penn.—*Furnace for Finishing Steel Iron.*—March 14, 1865.—The heating chamber in this invention is constructed with a perforated cover and floor, so arranged in relation to the fire chamber and flues that the fire and heated air shall enter the chamber through these openings in the cover and floor, at various points above and below the level of the sheets of iron placed therein. The rails for supporting the sheets of iron are raised above the level of the floor.

Claim.—Constructing the heating chamber with a perforated cover and floor, so arranged relatively to the fire chamber and flues as that the fire and heated air shall enter the chamber through these openings in the cover and floor, at various points above and below the level of the sheets of iron placed therein, substantially as and for the purposes hereinbefore described.

Also, in combination with the perforated floor of the heating chamber, the rails *t t*, raised above the level of the floor for supporting the sheets of iron.

No. 46,842.—ALFRED ARNOLD, assignor to himself, H. B. STANTON and D. C. EATON, North Englewood, N. J.—*Fastening Railroad Rails.*—March 14, 1865.—This invention consists of a screw so constructed as to be adapted to railroad rails to hold the same firmly to the ties and sleepers, and having but one point in its revolution to free the rails and admit of their removal.

Claim.—A screw with a head suitably adapted to railroad rails, to hold the rails firmly to their ties or sleepers, and which has but one point in the revolution to free the rails and admit of their removal, substantially as herein described and for the purposes herein specified.

No. 46,843.—JOHN G. BAKER, assignor by mesne assignment to HENRY DISSTON.—Philadelphia, Penn.—*Saw Grinding Machine.*—March 14, 1865.—This invention consists in the employment of a disk wheel and a casing adapted to receive and retain the saw blades, combined with a grindstone, to which a lateral vibrating motion is imparted by means of an arrangement of suitable mechanism.

Claim.—The disk wheel C, and casing B, adapted to the reception and retention of the saw blades, in combination with a grindstone, to which a lateral vibrating motion is imparted through the medium of the devices herein described, or the equivalents to the same, for the purpose specified.

No. 46,844.—CHARLES E. FOSTER, Philadelphia, Penn., assignor to the ROCK DRILL MANUFACTURING AND MINING COMPANY of Pennsylvania.—*Well-boring Apparatus.*—March 14, 1865.—This invention consists of a rock drill or cutter, combined with a series of tubes, in such a manner that a drill may be operated without the necessity of moving the tubes, and so that the detritus will be raised into and discharged from the tubes at any desired point.

Claim—First, the drill or cutter G, combined with the tubes B, and operating substantially as described.

Second, the casing A, and tube B, in combination with the casing C, its cutter, rod, and valve, the whole being constructed and operating substantially as and for the purposes specified.

No. 46,845.—JOHN GEORGE, assignor to himself and HENRY HAGUE, Jackson, Mich.—*Brick Machine.*—March 14, 1865.—This invention consists in the use of an elastic pressure armor blade, attached to the lower part of the rotary shaft in the mud mill, in a frame operated by a cam in the shaft and a weight attached to the carriage, together with friction rollers applied to the frame, and fitted in guides.

Claim.—First, the elastic or yielding blade or arm G, attached to the rotary shaft F, substantially as and for the purpose herein set forth.

Second, the frame or carriage J, operated by the cam C on the shaft F, and the weight L, attached to the frame or carriage, substantially as and for the purpose specified.

Third, the friction rollers *e*, applied to the frame or carriage J, and fitted in guides K, substantially as and for the purpose set forth.

No. 46,846.—STEPHEN W. GOODYEAR, assignor to CHARLES PARKER, Meriden, Conn.—*Screw-cutting Machines.*—March 14, 1865.—This invention consists of a metallic disk notched at intervals on its perimeter to the depth of half the diameter of the screw blank, which operates in conjunction with a vibrating jaw, having a similar notch for griping the blank and a covering or guard plate for preventing any displacement of the blank while lying in the notch of the disk, and passing from the conducting ways to the griping jaw. The disk has an alternating, revolving motion, bringing the blanks successively around the jaw, which which are grasped by the latter near the head and held by it firmly up against the disk, while the cutting or nicking tool is performing its operation.

Claim.—First, the combination of the rotating grooved cylinder with a fixed covering plate which bears horizontally upon the shanks of the blanks but endwise against their heads, and with a movable covering plate, for the purposes and in the manner substantially as described, thus forming a conveying tool.

Second, the combination of the cylinder with the movable jaw, forming together a vise, in which the blank may be rigidly held for such operations as nicking, or a journal in which the blank may be located for threading, &c., thus forming a holding tool.

Third, the combination of a cylinder, such substantially as is herein described, as having its fixed and movable covering plates with the curved feeding slide trough, whereby, without the use of the usual system of grippers, &c., the blank may be conveyed to the place where it is to be operated on, as set forth.

No. 46,847.—W. D. HALL, assignor to THE QUINNIPIACK COMPANY, Hamden, Conn.—*Manure.*—March 14, 1865.—This invention consists in drying and grinding the shells, claws, and other refuse parts of lobsters, by means of which a manure suitable for transportation is obtained.

Claim.—Preparing concentrated artificial manure from lobster refuse by desiccation and pulverization, substantially as herein described.

No. 46,848.—THOMAS HAWTHRONE, assignor to DUDSON & BROTHERS, Philadelphia, Penn.—*Circular Knitting Machine.*—March 14, 1865.—The claim designates the new features which are designed to be applied to circular machines only, the object claimed being the facility for using a greater number of thread than in the ordinary circular machine.

Claim.—First, the radially arranged levers C, to each of which is permanently secured a self-acting needle *c*, in combination with the annular plate D, its zig-zag edge, and the presser wheels I, the whole being arranged and operating as set forth.

Second, the combination of the said vibrating levers and self-acting needles with a serrated presser wheel, and the said annular plate with its zig-zag edge for the purpose specified.

No. 46,849.—HENRY HOWSON, Philadelphia, Penn., assignor to the ROCK-DRILL MANUFACTURING AND MINING COMPANY, Penn.—*Well-boring Apparatus, &c.*—March 14, 1865.—This invention consists in the use of cams in combination with certain arresting devices for controlling the downward velocity and force of well-boring rods, and thereby preventing the injurious jars and lateral strains to which they are subjected when of great length and weight.

Claim.—The use substantially in the manner described of cams or eccentrics in combination with the arresting devices herein described, or the equivalents to the same, for controlling the downward velocity and force of well-boring rods.

No. 46,850.—JOHN L. LAY, Buffalo, N. Y., assignor to himself and W. W. W. WOOD, Philadelphia, Penn., assignors to D. MCKAY, East Boston, Mass.—*Apparatus for Operating Torpedoes, &c.*—March 14, 1865.—This invention consists of a long spur, connected by an universal joint to the side of a small steam launch or picket boat, and controlled by a capstan and tackle, the spur having at the outer end a socket for carrying the shell or torpedo, which,

when submerged, can be released from the socket by lanyards, the torpedo being exploded after its release from the socket, and after the boat with its spur has been backed to a safe distance. This apparatus was used in destroying the Albemarle.

Claim.—First, the pipe C, arranged to receive and to act as a guide for the shell in combination with a stem or rod for pushing the shell through the said pipe, all substantially as set forth.

Second, the plate or socket D, and straps E, secured to the vessel, and arranged for the reception and retention of the end of the pipe C, substantially as described.

Third, the internal pipe I, adapted to the reception of the operating bar K, and arranged for attachment to and withdrawal from pipe C, substantially as described for the purpose specified.

No. 46,851.—W. W. W. Wood, Philadelphia, Penn., and John L. Lay, United States navy, assignors to Donald McKay, East Boston, Mass.—*Picket Boat and Apparatus for Discharging Torpedoes.*—March 14, 1865.—This invention consists of a pipe connected to a vessel near the bows, and arranged for the reception and guidance of the torpedo, which is pushed through the pipe by means of an operating rod, released from the latter after the shell has been projected outwards from the vessel.

Claim.—First, the spar D, connected to a boot, and controlled by tackle, substantially as described, in combination with the within described socket or its equivalent, for carrying and retaining a submarine shell or torpedo.

Second, the socket composed of the tube *d*, its chamber *e*, and plate I, the whole being constructed and arranged for the reception of the torpedo, substantially as set forth.

Third, the projection K of torpedo passing through an opening in the plate I, and the retaining and releasing pin *m*, and lanyard *t*, the whole being arranged and operating substantially as described.

Fourth, the arms *n*, cords *n'* of the socket and lanyard *p*, arranged in respect to the projection *f* of the torpedo, substantially as and for the purpose set forth.

No. 46,852.—Wm. W. W. Wood and John L. Lay, Buffalo, N. Y., assignors to Donald McKay, East Boston, Mass.—*Apparatus for Carrying and Exploding Submarine Torpedoes.*—This invention consists of a spar for holding at the end a torpedo, a sleeve for the reception of the spar, and a shaft or trunnion attached to the sleeve, the whole being applied to a vessel, and the spar being controlled by ropes or chains, so that it can be made to carry a torpedo outwards from the vessel, submerge the same, and be drawn back prior to the explosion of the torpedo.

Claim.—First, the spar B, sleeve C, and its shaft D, constructed and applied to a vessel, substantially as and for the purpose herein set forth.

Second, the guide *d*, chains or ropes G and F, in combination with the said spar B, and movable sleeve C, the whole being arranged and operating substantially as described.

No. 46,853.—Wm. W. W. Wood, Philadelphia, Penn., and John L. Lay, Buffalo, N. Y., assignors to Donald McKay, East Boston, Mass.—*Apparatus for Operating Submarine Shells or Torpedoes.*—March 14, 1865.—In this invention the shell is exploded by a cord. The length of the end is determined by the distance from the gun of the point above which the explosion is to be made. The shell on reaching this point is at full stretch and extension, and is the means of the explosion. The torpedo consists of a double shaft, a hollow exterior, containing a rod. This shaft turns on a ball and socket joint. The shaft is embraced by a supporting sleeve, which latter is the means of directing or pointing the shaft. A chamber or vessel is used to contain the torpedo, cord, &c.

Claim.—First, the combination of the operating bar H, the internal sliding rod 12, and the jaws herein described, or other equivalent retaining or releasing devices, the whole being arranged and operating substantially as described for the purpose specified.

Second, the packing 13, secured to the internal rod 12, and fitting to the interior of the operating rod 13, as and for the purpose set forth.

Third, the casting 14, arranged on the end of the operating bar H, for the reception of the shell 15, as and for the purpose herein set forth.

Fourth, the combination, substantially as described, of the operating bar H, with a cord 23, so arranged and so connected with the shell and appliances for igniting the charge in the same that the bar as it approaches the limit of its inward movement shall be the cause of exploding the shell.

Fifth, the chamber 22, combined with the casing 14, and arranged for the reception of the discharging cord 23, as set forth.

Sixth, the two driving shafts F and P', with their chain bands, the chains Q and G, and the operating bar H, the whole being constructed, arranged, and operating substantially as set forth.

Seventh, the click wheel L'', operated from one of the driving shafts, and arranged to control the clutches on the said shafts, as set forth.

Eighth, the sliding blocks I and V', caused to traverse in guides by the aid of screws, substantially in the manner and for the purpose described.

Ninth, the sleeve T, adapted to the operating bar H, and combined with the mechanism herein described, or the equivalent to the same, whereby the said sleeve can be turned in a vertical or horizontal plane, as herein set forth.

Tenth, the said sleeve T, in combination with the slides and guides, and operating screws herein described, or the equivalent to the same, whereby the sleeve can be moved to and fro horizontally.

Eleventh, the adjustable stop of the steam cylinder, in combination with the sleeve T, and the system of levers, chains, and pulleys herein described, or the equivalent to the same, whereby the said sleeve can be raised and lowered, and its downward motion limited, as set forth.

Twelfth, the combination of the said movable sleeve T, the operating bar H, and the ball and socket joint, the whole being constructed and arranged for joint action, substantially as set forth.

Thirteenth, the combination of the said sleeve T, its friction rollers V V, and the operating bar, the whole being arranged and operating substantially as and for the purpose described.

Fourteenth, the arresting plate 2, in combination with the operating bar H, and its internal rod 12, the said plate being arranged to operate in conjunction with the appliances herein described, or the equivalents to the same, substantially as and for the purpose herein set forth.

No. 46,854.—E. C. GILLETTE, Richfield, British Columbia.—*Improvement in Augers.*—March 14, 1865.—This invention consists of a cam sleeve in combination with a slotted shaft, and a flat notched shank of an auger, so that the shank of the auger will slide into the long slot in the shaft, through the cam sleeve, which is then turned so that it will catch into the notches in the flat shank of the auger, and hold it fast in the shaft.

Claim.—The cam sleeve C, in combination with the slotted shaft C, and with the flat notched shank D of the auger, constructed and operating in the manner and for the purpose substantially as set forth.

No. 46,855.—LAZARUS MORGENTHAN, Duchy of Baden.—*Manufacture of Cigars, Cigarettes, &c.*—March 14, 1865.—This invention consists in saturating the filling of cigars with an extract of pine needles and pine twigs, and also in removing the nicotine from tobacco to be smoked.

Claim.—As a new article of manufacture, the fichtennadel cigars above described, the tobacco being partially filled with preparations derived from shoots of the pine tree, substantially in the manner and with the effect herein set forth.

Also, the fichtennadel preparations herein described, adapted for use in the manufacture of cigars, in the manner and for the purpose herein set forth.

No. 46,856.—PIERRE ETIENNE PROUST, Paris, France.—*Method of Lubricating Machinery.*—March 14, 1865.—This invention consists in the use of grease and water for the purpose of lubricating journals or axle-boxes. The axle-box is provided with a cup containing water, the water being supplied to the axle by means of a wick and wick tube. The oil is supplied in the ordinary manner.

Claim.—The method, substantially as herein described, of lubricating journals, consisting of the simultaneous application of water and grease, as set forth.

No. 46,857.—ANSON BURCHARD, Livingstonville, N. Y.—*Machine for Pulling Flax.*—March 14, 1865.—This invention consists of a small frame mounted on wheels, that serve as fulcra. The frame is armed with two rows of teeth, one fixed and the other movable. A bar is pushed forward after the flax is pulled, in order to clean the teeth of the flax.

Claim.—A frame mounted on wheels, which form a fulcrum for the frame to vibrate on, which frame is armed with a series of stationary teeth, in combination with a series of traversing teeth, arranged to operate substantially as described, for the purpose set forth.

Also, in combination with the devices above claimed, the clearing pan for removing the flax from between the teeth after it is pulled.

No. 46,858.—W. B. DODDS, assignor to himself and N. MCNEALE, Cincinnati, Ohio.—*Lock.*—March 14, 1865.—In this lock the movement of the bolt is effected by the direct action of a series of rotating tumblers, such as are common to many permutation locks. To this end, a bar pivoted at one end to the bolt carries at the other end a projecting tooth, which, when the tumblers are arranged in a certain position, falls into the notch or gate thereof. When in this condition, by turning the spindle, the toothed bar will be drawn upon by the tumblers, and the bolt will thus be projected outwards, and by turning still further the tooth will ride up out of the gate and rest with its point upon the periphery of the series, in doing which a notch on the upper surface of the toothed bar will embrace a permanent stub projecting from the lock plate, and thus render the bolt immovable until the tumblers shall have been so arranged as to permit the tooth to again fall into the gate.

Claim.—First, the method of operating and detaining the bolt by means of the dog pivoted thereto, the bit of the dog engaging the detent stump when the bolt is thrown, substantially as described and represented.

Second, the method of operating and adjusting the disc tumblers by the application to each of a disc or annular armed plate provided with a pin, which latter projects through the hole in its appropriate tumbler and engages with the arm of the annular plate appertaining to the tumbler next in series, substantially as described.

Third, the washer interposed between the tumblers in the series and prevented from rotating by the tooth which engages in the slot in the socket, substantially as and for the purpose described.

No. 46,859.—JACOB LEBRAU, Cincinnati, Ohio.—*Moulder's Table.*—March 14, 1865.—This invention consists in supplying the follow board with a permanent central foot or fulcrum upon which to turn or cant it, and removable chocks or legs by which it is held in a horizontal position while the mould is being made. When that is finished and the pattern withdrawn the chocks are removed, and the follow board is allowed to be turned or tipped in any direction for the purpose of smoothing or dusting the mould, the flask being prevented from slipping on the board by pins inserted therein.

Claim.—The rolling or tipping table for moulders' flasks, constructed and operating substantially as and for the purposes set forth.

No. 46,860.—J. MOULTON, Boston, Mass.—*Elastic Packing for the exterior of Pumps in deep Oil Wells.*—March 14, 1865.—An elastic tube embraces the pump barrel, and its upper end being flaring expands under the pressure of water from above, and is thus pressed into the irregularities of the shaft.

Claim.—The packing elastic material one or more made to embrace the exterior of the tube and having a flaring flange or cup as described adapted to expand into the inequalities and crevices of the shaft or well under the pressure of the superincumbent water and its or their own, elasticity substantially as described.

No. 46,861.—EDWARD OSMOND, Cincinnati, Ohio.—*Burner for Gas Stoves.*—March 14, 1865.—The gas entering at the bottom of a tapering or contracted tube, mixes with atmospheric air, entering through perforations near the base, and, flowing up to the top, is ignited. The top of the tube may be further contracted by a circular flange or ledge inside.

Claim.—The heating gas burner formed of the tapering or contracted tube B C, applied to the service nozzle *a*, in the manner set forth.

No. 46,862.—JOSEPH NOTTINGHAM SMITH, Jersey City, N. J.—*Faucet.*—March 14, 1865.—The barrel is of ordinary form a horizontal portion of its length, and vertical at its eduction end. A supplemental tube fitting outside the vertical tube carries a plug within it to close the port. When this outer tube is lowered the liquid flows within the outer tube and around the plug. A lever is hinged to the faucet at its bend, and, when perpendicular, holds the side extensions of the outer tube by means of two lateral pins passing into slots in said extension; but when this lever is inclined forward its pins pass out of such slots to permit the descent of the plug and the flow of the liquid.

Claim.—Closing the faucet by a valve or stopper shutting upward in its orifice, substantially as and for the purpose herein specified.

Also, the inclosing spout or discharge tube D, arranged and applied substantially as and for the purpose herein set forth.

Also, the combination of the handle G, with or without a spring *o*, in combination with the slotted ears H H of the discharge tube D, substantially as and for the purpose herein described.

Also, the vent aperture *i* in combination with the valve *c* and discharge tube D, for the purpose specified.

No. 46,863.—J. N. SMITH, Jersey City, N. J.—*Machine for Raking and Loading Hay.*—March 14, 1865.—In this machine the teeth of the rake are so arranged that the hay is gathered inward from each side towards the back part of the rake, when it is caught by teeth upon an endless belt and carried to the upper part of the machine, where it is discharged into the wagon. The rake is drawn flat upon the ground by bars pivoted both to the axle and a bar passing through the rear end of the teeth. The bars to which the teeth of the endless apron are attached are wholly underneath the belt. Devices are attached to the front and rear of the machine for securing it to the wagon, and supporting it when at rest.

Claim.—Pivoting the draught hooks I I to the rear of the elevator frame so as to produce the necessary length of the draught line to insure freedom of motion, as set forth.

Also, the swinging frame L with its lever K, whereby the draught hooks may be detached from the wagon or cart, and the elevator is retained and supported in its upward position after being detached, substantially as and for the purpose herein specified.

Also, the construction and arrangement of the side rake teeth Q R S, substantially as and for the purpose herein specified.

Also, the combination of the inwardly-gathering side rake teeth Q R S, and the elevating teeth P P, constructed and arranged substantially as and for the purpose herein set forth.

Also, the arrangement of the rake, so as to be drawn flat on the ground, by the freely-vi-

brating or double-pivoted draught bars N N, drawing the rake teeth by the rear ends thereof, substantially as herein set forth.

Also, the concavely curved under surfaces of the rake teeth, together with the projecting heels *u u* behind their pivot shaft *n*, for the purpose set forth.

Also, constructing the elevator with its rake heads *e e e* inside of, and its teeth *f f f* projecting through, the endless apron D, substantially as and for the purposes herein specified.

No. 46,864.—R. ROBINSON, New York, N. Y.—*Closing Bottles.*—March 14, 1865.—This invention consists in forming the neck of a bottle in the shape of an inverted frustum of a cone. The stopper consists of a valve formed of a circular piece of India-rubber, held between two metal plates, the lower part of the neck forming the valve-seat. The valve is held close to the seat by means of a V-shaped spring. The bottle is opened by pressing the stopper inward, which is effected by means of a cap.

Claim.—The valve or stopper B, with the spring C attached to it, in connection with the conical neck A of the bottle, substantially as described.

Also, the cap D, provided with the frame or projection E, or its equivalent, for pressing in the valve or stopper B, and serving as a guide for the escaping liquid, substantially as described.

No. 46,865.—ALFRED WEED, assignor to himself and LEWIS J. BIRD, Boston, Mass.—*Machine for Cutting Files.*—March 14, 1865.—The nature and object of this invention is explained by the claim.

Claim.—First, supporting the blank by a roller, so constructed and arranged as to be susceptible of a lateral movement or play, and so as to keep the top surface of the blank always horizontal and present the whole width to the chisel, as set forth.

Second, the combination of an elastic pad or bunter attached to the cutter-arm, with an adjustable stop, so operating together that while preventing the variation in the force of the blow, as the file is being fed along, the depth of the cut may be regulated at pleasure, substantially as described.

Third, the method herein described of holding and feeding the file blank by means of a feed mandrel or shaft, carrying the one end of the blank in a central socket and a bed, or the equivalent thereof, for the support of the other end or of any part thereof intermediate between the two ends, in combination with a pressure pad or lever for holding the blank on the support, substantially as set forth.

Fourth, in combination with a feed mandrel or shaft holding one end of the file blank, a roller bed and a pressure pad for supporting and holding the other end, or any part thereof intermediate between the two ends.

Fifth, the construction and arrangement of the roller *u*, shell *w*, and ball-shaft *v*, as described.

No. 46,866.—ISAAC SUTVAN, assignor to BARTON H. JENKS, Bridesburg, Penn.—*Breech-loading Fire-arm.*—March 14, 1865.—This invention consists of a pivoted rolling breech-block, containing within it the hammer, which is cocked by the act of drawing back the said breech-block. A thumb latch, by which the breech is opened, serves to lock it firmly against the recoil of the discharge, and by the peculiar relation of its under surface to the upper part of the hammer, over which it vibrates, prevents the hammer from falling until the breech-block is securely locked in place.

Claim.—First, the combination of a vibrating breech-piece and a vibrating latch and hammer, when said vibrating latch and hammer are both placed in a fork or recess in the movable breech-piece.

Second, the safety device or locking the latch brace by means of the projection or inclined planes on the top of the hammer acting on the under surface of the latch in its forward movement, thus securely locking the breech before the hammer can explode the cartridge.

Third, the action of the latch upon the trigger and hammer when the breech is open, preventing any forward movement of either before the breech is closed, and relieving itself from the top of the trigger, substantially as described.

No. 46,867.—AUGUSTINE I. AMBLER, Chicago, Ill.—*Friction Wheels and Oil Chamber.*—March 21, 1865; antedated March 10, 1865.—This invention is applicable to railroad car brakes and other machinery to which power is transmitted through the medium of a friction wheel, an oil chamber being arranged in such a manner that the former will always be kept in a perfect state of lubrication.

Claim.—First, the wheel C, combined and arranged with the bushing or collar B upon a shaft A, in such a manner as to form a friction clutch and anvil chamber, substantially as set forth.

Second, in combination with the male and female parts of the clutch, the feather and groove *a b*, spring G, nut F, when used with a friction wheel C, substantially as and for the purpose specified.

Third, the bi-conical spiral-grooved heads I placed on the shaft A, in combination with the friction wheel C, for the purpose specified.

No. 46,868.—Hamlin Babcock, New York, N. Y.—*Thread and Needle Box.*—March 21, 1865.—In this invention a spool upon which the thread is wound is hollow, to contain the needles, thimble, and other articles. The ends contain cushions to receive the pins laterally, and the wax is held to the inside of the top by a dovetail form or other means of attachment.

Claim.—A thread and needle box for soldiers and travellers, constructed of a hollow spool, adapted to having thread wound upon its exterior, and to contain thimble, needles, buttons, or other articles, substantially as above described.

No. 46,869.—W. P. Parker, Grand Rapids, Mich.—*Grain Binder.*—March 21, 1865; antedated March 6, 1865.—This invention relates to the devices employed for tying the knot in the sheaf band, and will be understood from the claim and engraving.

Claim.—The revolving and longitudinally moving tube A, provided with the hook *h*, the sliding tube F, and the rod G, provided with the hook *l*, in connection with the shield E, or its equivalent, all arranged to operate in the manner and for the purposes herein set forth.

Also, the sector D, connected with the tube A by a cord C, or by gearing, in connection with the bar *m*, provided with the curve *n* and the pivoted bar H, and the spirally-slotted hub B and pin *d*, all arranged as shown for operating the tubes A F and rod G as described.

No. 46,870.—James P. Baxter, Portland, Maine.—*Smoking Pipe.*—March 21, 1865.—In this invention a diaphragm composed of one or more pieces of metal is placed below the smoke passage, in the bowl of a tobacco pipe, so arranged in relation to each other, or the inner surface of the bowl, as to form a chamber for the retention of air, &c. Beneath the diaphragm is a large chamber to catch the nicotine and saliva. This chamber is stopped at the bottom by a screw plug; a straight passage connects this chamber with the mouth-piece. The interior of the bowl above the diaphragm is connected with this passage by a short oblique tube. The mouth-piece can be detached and used as a cigar-holder.

Claim.—First, a diaphragm or septum placed below the smoke passage in the bowl of a tobacco pipe.

Second, a diaphragm composed of one or more pieces of metal or other suitable material, so arranged in relation to each other, or the inner surface of the pipe, as to form a concavity for the retention of air or any material which may have a cooling effect on the contents of the pipe.

Third, the channels *e f*, in combination with the diaphragm D, in the bowl A, and with the stem C, constructed and operating substantially as and for the purpose described.

Fourth, the diaphragm or septum, as described, with the plug, as described.

No. 46,871.—James Bolton, Chicago, Ill.—*Tuck-creasing Device for Sewing Machines.*—March 21, 1865.—In this invention the device is held to the table and the moving portion of the marking device is hinged to the stationary part, also adjustably connected to the presser, which has a positive vertical motion for gripping and releasing the cloth, and carries with it the hinged arm of the marker, and so effects the creasing. When the creases are to be far apart, this arm, on account of the change in the leverage, rises higher, and so tends to relieve the cloth from the greater drag consequent on the increased breadth of fabric between the needle and the creaser.

Claim.—First, the tuck marker A, for use with a sewing machine, made and operated substantially as above described.

Second, marking parallel lines for tucks, or for seaming, or for perforating material on a sewing machine, by means of a marker which is operated by a presser bar having a positive vertical motion, substantially as above described.

No. 46,872.—Alonzo T. Boon and Wm. W. Spaulding, Galesburg, Ill.—*Mop.*—March 21, 1865; antedated February 1, 1865.—This invention consists in the combination of a rod and cross-bed with a set screw for grasping the spiral springs which stretch across the folds of the cloth.

Claim.—The rod B, with cross rod C, and heads H H, the handle D, with crop rod E and set screw I, and spiral springs F F, when their parts are arranged as specified in combination with the handle A, for the purpose set forth.

No. 46,873.—Charles Brandenburg, New York, N. Y.—*Composition for Preserving Wood and Coating Oil Barrels.*—March 21, 1865.—In this invention linseed oil is boiled with black oxide of manganese, and combined with a compound of plumbago, hydraulic cement, and plaster of Paris, and with a solution of rubber in benzine or naphtha.

Claim.—The within described compound for preserving wood and coating barrels and other vessels.

No. 46,874.—E. K. Breckenridge, Meriden, Conn.—*Window Springs.*—March 21, 1865.—This device consists of an L-shaped lever, on the end of the main arm of which is the knob or thumb piece. Projecting laterally from the elbow, and on each side thereof, is a small journal. The upturned portion of the short arm forms the hook. Fastened to the jamb is a plate cast with two lugs, one on each side of a slot, for the reception of the journals,

while the main arm passes horizontally through said slot, the hook passing through another transverse slot in the upper end of the plate. A spring, secured by passing under a yoke cast on the back side of the plate for that purpose, presses upon a ledge or projection on the short arm of the lever and holds it in its place.

Claim.—The combination of the plate A, latch B, and spring D, constructed as described to operate in the manner specified.

No. 46,875.—Wm. Bruckvner, San Francisco, Cal.—*Process for Refining Amalgam.*—March 21, 1865.—This invention consists in treating the impure amalgam with chloride of copper, the latter being obtained by roasting copper ores with iron pyrites and salt.

Claim.—The application and use of bichloride of copper or its equivalent, together with iron pyrites and salt, without reference to the exact proportion of each ingredient, in the manner and for the purpose herein described.

No. 46,876.—D. W. Bryan, Chicago, Ill.—*Grain Conveyer.*—March 21, 1865.—This invention consists of a succession of cups or brackets arranged in the form of an endless apron; the shafts passing through and fastening the ends of each bucket are provided with rollers that run upon trucks or guides.

Claim.—First, the combination of the metallic buckets I, the endless chains D D, and pulleys A A, arranged and operating substantially as and for the purposes herein set forth and shown.

Second, the combination and arrangement of the metallic buckets I, the shafts C, the endless chains D D, the friction wheels F, and trucks G, operating as and for the purposes specified and shown.

No. 46,877.—Marvin S. and J. R. Cadwell, Dexter, Mich.—*Seeding Machine.*—March 21, 1865.—This invention relates to a revolving hollow cylinder, in which the seed is placed. There are holes along the cylinder through which the seed falls upon a plate placed a little distance outside of the holes. In this manner the seed is scattered broadly.

Claim.—The employment of the revolving seed box D, in combination with the gage plates *m m m m*, and distributing plates P P P P, substantially in the manner and for the purposes as herein specified.

Second, the arrangement of plates P on a revolving box, substantially in the manner and for the purpose described.

Third, the arrangement of the revolving box, constructed and operating as described, in rear of the axle, for the purpose set forth.

No. 46,878.—Wm. F. Channing, Providence, R. I.—*Marine Railway.*—March 21, 1865.—This invention consists of a railway the termini of which extend a sufficient distance into the water to enable a ship to float into or out of a tank supported upon a car, running upon said railway, by which means a vessel may be withdrawn from one lake, basin, or river, and after overland transportation be floated into another body of water at the opposite end of the railway.

Claim.—The employment of a water support or caisson in the manner and for the purposes described for the overland transportation of vessels between navigable waters.

Also, the combination of a water tank or basin for floating a vessel, with a railway car truck or trucks.

Also, in a marine railway a compound or multiple railway track having parallel rails so disposed that each rail, excepting the two outer rails, may serve as a part of a track at each side thereof, in the manner and for the purposes herein described.

Also, the combination of a multiple or compound track with a dock or docks at one or both extremities of a marine railway, for transportation of vessels from one body of water to another as herein described.

Also, the vertically moving terminal section of the track as herein described, constructed and arranged to operate in connection with elevating, supporting, and lowering apparatus and with the water support or caisson to receive and discharge the vessel substantially as set forth.

No. 46,879.—Solomon Chapin, Cincinnati, Ohio.—*Sofa Bed and Crib.*—March 21, 1865.—This invention consists in the combination of a sofa and drawer so arranged that it can be used as a bed for two persons, and a portion of the bed bottom turned up vertically; the drawer under the sofa and the vertical portion of the bed bottom serves as a side to the bed, forming a child's crib.

Claim.—The combination of the several parts as described for the purposes set forth.

No. 46,880.—Edgar Chipman, New York, N. Y.—*Churns.*—March 21, 1865.—This invention consists in putting ledges on the guides or ways of a rocking churn, and connecting the churn to the ways by cords to prevent longitudinal slipping, also in using a tubular dasher that may be filled with warm water.

Claim.—The rockers B in combination with the ledges or cleats *b'* on the ways or guides C C, to prevent any lateral movement of the churn on the ways or guides, as set forth.

Second, the cords or chains D D applied to the churn, and the cross-bar E of the ways or guides, to prevent longitudinal slipping of the churn on the ways or guides, as specified.

Third, the tubular fixed dasher E, when used in connection with a rocking or oscillating churn, substantially as and for the purpose specified.

No. 46,881.—J. R. and C. B. CLARK, Mount Pleasant, Iowa.—*Fence.*—March 21, 1865.—This invention consists in providing the upper part of the fence with a roller or a series of rollers, arranged in a line with each other, so as to be continuous all around the fence, or the whole length of the same, and prevent a depredating animal from obtaining a foothold at the top of the fence in attempting to jump the latter.

Claim.—A roller or series of rollers applied to a fence substantially as and for the purpose herein set forth.

No. 46,882.—T. J. COLLIER, Canonsburg, Penn.—*Carpet Stretcher.*—March 21, 1865.—This invention consists in constructing an implement for stretching and straightening carpets preparatory to securing them to a floor by means of a friction surface, and in the use of which no injury is done to the fabric.

Claim.—The carpet stretcher above shown constructed to operate by friction substantially as above described.

No. 46,883.—MARTIN COLTON, Sardinia, N. Y.—*Flood Gates for Mill-dams.*—March 21, 1865.—This invention consists in placing and using centrally in a mill-dam a flume or frame work, in which is arranged a hinged waste-gate connected with a weighted lever or working beam, so that the said working beam will exactly balance the gate and hold it shut at an angle of about 45°, when the water in the dam is at a proper or safe height, and which will yield and allow the gate to open and discharge the water, when the water rises above the point indicated as the point of safety, and when the water falls below said point the working beam will overcome the pressure of the water upon the gate and close it, thus making a self-acting flood gate.

Claim.—A self-acting safety flood gate composed of the gate C, working beams F, and connecting rods I, placed and used in a flume B, for the purposes and substantially as herein described.

No. 46,884.—SAMUEL N. CUSHING, Waltham, Mass.—*Railway Gates.*—March 21, 1865.—This invention consists in a means of closing railroad crossing gates, either across the roads or track, as may be desired. The operation will be understood from the claim and engraving.

Claim.—The combination for operating the gates arranged with respect to the roadway and railway as described, the same consisting in the arms, the impelling rods, the carriage or its equivalent, and in the carriage windlass and ropes or a mechanism for moving the carriage in manner as explained, the whole being applied to a frame erected at the crossing or junction of the roadway and railway and so as to separate and be capable of being operated substantially as specified.

No. 46,885.—M. J. DANZIGER, New York, N. Y.—*Cigarettes.*—March 21, 1865.—This invention consists in forming the lip or mouthpiece of a cigarette of a roll of the refuse stems of the tobacco.

Claim.—Forming the mouthpiece of a cigarette of stocks or stems of tobacco in the manner and for the purpose described.

No. 46,886.—ADAM DICKEY, Cincinnati, Ohio.—*Knapsack Supporter.*—March 21, 1865.—This invention consists in a method of relieving the soldier of the backward pulling upon the shoulders caused by the knapsack. The device is composed of what is termed the saddle, consisting of a band of metal grasping the hip bone and of two standards capable of being fixed at any given adjustment.

Claim.—The knapsack supporter composed of the parts D E E′, and their described or equivalent accessories, substantially as set forth.

No. 46,887.—TIMOTHY EARLE, Valley Falls, Smithfield, R. I.—*Preserve Jar.*—March 21, 1865.—This invention consists of a ring, the interior diameter of which is the same as the exterior diameter of the neck of the jar. The jar is provided with a lid of the same diameter as the neck, and a packing ring is inserted between the lid and the neck, and the ring is slipped over the lid. The lid is then clamped on.

Claim.—The use of the detached ring C in combination with the cover and neck of a preserve jar, substantially as described.

No. 46,888.—JONAS EBERHARDT, Philadelphia, Penn.—*Producing Coloring Matter for Dyers.*—March 21, 1865.—This invention consists in treating phemic acid with about an equal weight of nitric, nitrous, sulphonitrous, or other equivalent acid, and, after complete reaction has taken place, pouring the resulting compounds into a large volume of water, when the coloring matter will be precipitated. The colors provided will be yellow, brown, gray or other shades, according to the strength of the acid used.

Claim.—The "phenico" described, as a new article of manufacture for the use of dyers.

No. 46,889.—CHARLES H. EGGLESTON, Marshall, Mich.—*Seeding Machine.*—March 21, 1865.—This invention consists of the seed slide working in combination with the brush, and is furnished with a covering guard plate. This guard plate works upon a spring placed beneath it, and when pressed by a kernel that is caught yields and forms an inclined plane upon which the seed passes back free from the slide.

Claim.—The employment of the seed slide *s* and brush slide K, when connected together substantially as described, in combination with the spring M and guard plate N, as and for the purposes specified.

No. 46,890.—DAVID ELDRIDGE, Philadelphia, Penn.—*Fly Wheel.*—March 21, 1865.—This invention consists in arranging a fly wheel on the driving shaft, or on an independent shaft, and connecting it with a wheel or pulley on a driven shaft in such manner as to give a greater velocity to the fly wheel than that given to the driving wheel, for the purpose of increasing the momentum of the former beyond what it would have if arranged in the usual manner, and consequently running it at a lower velocity than it attains by the method claimed.

Claim.—The combination of the flanged wheel B, fly wheel D, pulley F and G, belts J and K, and treadle H, or its equivalent, arranged to operate substantially as described.

No. 46,891.—JULIUS FELDMAN, New York, N. Y.—*Bolts for Doors and Shutters.*—March 21, 1865.—In this invention the bolt is moved back and forth by a rack and pinion, the pinion having upon its upper side a ratchet, and coiled around it a spring. A lever is attached to the pinion, which, being moved in the direction against the coiled spring, bolts the door, and the bolt is prevented from moving back by a pawl which engages the ratchet teeth. When it is desired to unbolt the door the pawl is raised out of the ratchet teeth by a thumb slide, and the spring forces the pinion around, drawing the bolt back.

Claim.—The application to a slide bolt for doors, shutters, &c., of a pinion ratchet, spring, and pawl, to operate in the manner substantially as and for the purpose herein set forth.

No. 46,892.—JOHN S. FERGUSON, Poughkeepsie, N. Y.—*Jacquard for Weaving Three-ply Fabrics.*—March 21, 1865.—The object of this invention is to divide the harness into three equal parts equal to one of the sections of the two-ply now in use, and having the same tie-up, without increasing either the surface or number of cards to a greater extent than the increased number of sections due to the three-ply above the two. The knotted cards are given an inward, outward, and middle position to enable the trap board to select the proper ones. The middle trap board has two sets of combs for each row of tail cords, the saw cuts facing each other. The front and rear trap boards have two horizontal movements forward and one backward in three consecutive picks.

Claim.—First, the mode herein described of arranging the needles and inserting the cords through them, for the purpose of giving to the cords the three positions above described.

Second, the mode herein described of constructing the middle trap board and the use and motions of the rods or bars placed above them, for the purposes substantially as set forth.

Third, giving to the front and rear trap boards the motions herein described, for the purposes specified above.

Fourth, tying the harness in three equal and uniform parts in looms for weaving three-ply goods, as above specified.

No. 46,893.—JOSEPH G. FULLER, Brooklyn, N. Y.—*Engine for Preparing Paper Stock.*—March 21, 1865.—This invention consists of a revolving wheel composed of ranges of teeth alternating with a rough or abrading surface that draw the fibre from a hopper, tear up and rub the same, and also bring the fibre down into a washing vat, in which is a concave range of teeth that act to tear apart any fibres that are sufficiently long to reach from the said stationary concave range of teeth to the revolving teeth.

Claim.—A revolving wheel, composed of teeth in sections, with stone intermediate or other rough material, in combination with a hopper containing the vegetable material, to be operated on as set forth.

Also, in combination with the said revolving wheel of alternate teeth and roughened surface, the stationary concave of teeth in a trough *a*, as and for the purposes specified.

No. 46,894.—J. L. GILBERT, Boston, Mass.—*Coal and Ash Sifter.*—March 21, 1865.—This invention consists of a box provided with a spout and flange fitted over a proper receptacle for the ashes. Inside the box is a reciprocating screen hung on wires, the said screen being provided with a sieve inclined sufficiently to discharge the coarse coal, cinders, &c., into the spout, and on top the box is hopper provided with a cover.

Claim.—The box B, provided with a spout C and flange *a* and fitted over a proper ash receptacle A, in connection with a reciprocating screen D placed within B and having an inclined sieve *e* to discharge into spout C, and with the hopper E upon the box B, all arranged substantially as described.

Also, suspending the screen D upon parallel guide rods *c c* to admit of the ready working of the screen, as set forth.

No. 46,895.—H. G. Giles, Troy, N. Y.—*Base-burning Stove.*—March 21, 1865; antedated September 21, 1865.—In this invention apertures in the sides of the fire pot and near its top communicate with hollow radial bars which extend from a central ring to the side of the pot and through perforations in the sides of the bars. A passage is thus made for the flow of external air into the chamber of combustion. In front of this chamber in the outer case are mica windows. From indentations or open pockets in the sides of the stove tubes pass up to a hot-air chamber in the top of the stove; thence the heat can be distributed at pleasure.

Claim.—First, the combination of apertures *e* in the fire pot of a base-burning stove communicating with hollow radial bars *b* provided with openings in the sides and mica windows *d d d*, arranged and operating substantially as and for the purposes set forth.

Second, the air pipes *g g* in combination with the openings *f f*, air chamber *h*, reservoir C, and cylinder A, arranged and operating substantially as and for the purposes set forth.

No. 46,896.—Isaac Goodspeed, Norwich, Conn., and Gurdon S. Goodspeed, Providence, R. I.—*Spinning Roller.*—March 21, 1865; antedated March 8, 1865.—The claim sufficiently defines the nature of the invention.

Claim.—A roll for drawing, roving, or spinning machinery, constructed with a surface of cork applied with its flaws or interstices parallel with the axis and compressed and turned, as herein before described.

No. 46,897.—Francis L. Hagadorn, Brooklyn, N. Y.—*Transparent Sign for Street Lamps.*—March 21, 1865.—This invention is fully explained by the claim.

Claim.—The application of printed lettering, or its equivalent, to the glass plates of street lamps, or their equivalents, in combination with paper, which performs with the said glass plates the function of ground glass, substantially in the manner and for the purpose herein set forth.

No. 46,898.—Nelson Hammond, Tioga, Penn.—*Regulating Ventilator.*—March 21, 1865.—In a tube set in a metallic reservoir containing mercury or oil is a piston, to which is attached a rod or arm passing through a slot in a lever and held tightly, so as to move the lever when it is moved by the action of heat on the substance in the reservoir. Motion is communicated from this lever by a series of rods and arms to windows or registers.

Claim.—First, adapting both the bar B′ and the weight J, to be adjusted longitudinally upon the lever C, to maintain a uniform effect of the weight while varying the extent to which the ventilator will be moved by a given motion of the piston.

Second, in combination with the close vessel A, the piston B, arm B′, when connected to the lever C in the manner described, so as to permit the said arm or bar B′ to be adjusted vertically upon the lever to adjust it to the height of the fluid or the position of the ventilator, the whole constituting a thermal medium for regulating ventilators, substantially as set forth.

Third, in combination with the lever C, operated as described, the rod G and cord G′, for raising and lowering the sashes F F′, as explained.

Fourth, in combination with the aforesaid lever C and the close vessel A, cylinder A′ and piston B, the levers H and rods *h*, for transmitting motion from the sashes of one window to those of the other or others, substantially as specified.

Fifth, the combination of the vertical slots *e* with the weight J and piston B, for restricting the motion of the lever C to the operating end thereof while the ventilator is being opened or closed, and permitting the fulcrum end of the lever to move after the operating end has reached the extremity of its movement, substantially as and for the purposes set forth.

No. 46,899.—Charles A. Hardy, Pittsburg, Pa.—*Still for Oils, &c.*—March 21, 1865.—This invention consists of a still divided into two compartments by a horizontal partition. Both compartments communicate by means of a tube with a supply tank, from which the oil is introduced to the still. The two compartments communicate with each other by means of a pipe which is provided with gauge cocks, or the communication between the compartments may be effected by means of an aperture in a partition closed by a valve which is operated by a float. The liquid is first allowed to flow into the upper compartment, and the most volatile portion distilled over, escaping through the head D and pipe D′. The remaining liquid is then let into where the final distillation is effected, the products escaping through suitable pipes.

Claim.—The arrangement and combination of parts in the diaphragm still, consisting of the float valves *m p* and *k g* governing the inlets to the upper and lower compartments B and C, respectively, and the heads D E communicating with the separate escape pipes D′ E′, as described and represented.

No. 46,900.—J. O. Harris, Ottawa, Ill.—*Window Sash Supporter.*—March 21, 1865.—In this invention the sash is prevented from being moved by a rack attached to one side, gearing into a pinion on a shaft in the jamb, adjoining which, on the same shaft, is another notched pinion, into which a lever or pawl, with a square tooth or dog, catches and prevents

the two from turning. By turning a cam in front of the lever by means of a key, the lever, with the dog, is thrown backwards against a spring and out of gear with the notched pinion, which allows the two to turn and the windlass to be raised or lowered.

Claim.—The combination and arrangement of the two ratchet wheels, lever pawl and spring aforesaid, with the tumbler *g h i*, operated by a removable key, substantially as and for the purposes shown and described.

No. 46,901.—JOHN O. HARRIS, Reading, Pa.—*Lamp Burners.*—March 21, 1865.—This invention consists in the combination of two concentric cups placed in reversed positions, one within the other, so that the air to support combustion will enter the burner at the top and descend therein before rising to the flame, thus protecting the flame from sudden lateral drafts of air, and adapting the lamp to burn without a chimney.

Claim.—The combination of the jackets D D′, intermediate space *d*, apertures *d′* and tube E, the whole being employed in connection with a wick tube C, in the manner and for the purposes herein set forth.

No. 46,902.—JAMES HAWKINS, Braddock's Field, Pa.—*Submarine Safety-Mouthpiece.*—March 21, 1865.—This apparatus consists of a forked or divided elastic tube reaching to the surface of the water, combined with a T-shaped mouthpiece.

Claim.—The T-shaped piece A provided with a mouthpiece *a*, flexible tubes *d d′*, and valves *e e′*, and applied to the face of a diver, substantially as and for the purpose set forth.

No. 46,903.—L. HOLLOWAY, Gilroy, Cal.—*Gang Plough.*—March 21, 1865.—In this invention the plough frame is connected with a truck by means of a link joint, which, in connection with adjustable rods, enables the driver to hold the frame at variable heights parallel with the ground.

Claim.—The link joint I, in combination with the adjustable rods *h i*, lever J, plough frame H, and truck A, constructed and operating in the manner and for the purpose substantially as herein shown and described.

No. 46,904.—JOHN HOOVER, Manchester, Md.—*Doubletree for Carriages.*—March 21, 1865.—This invention consists of two elastic cross-levers operating on an elliptical spring connected with two front levers and two side or draft irons connecting with the elastic singletrees, the object being to prevent the breaking of the traces or harness by a sudden forward movement of the horses.

Claim.—The elastic double and singletrees, when arranged, constructed, and combined, as herein described and set forth.

No. 46,905.—H. UPTON HOOVER, Macomb, Ill.—*Band Cutter and Feeder for Threshing Machine.*—March 21, 1865.—In this invention a series of metallic rakes, arranged upon endless aprons, carry the thread along rollers to a circular knife that cuts the bands. A vibrating table distributes the grain upon a series of vibrating forks or fringes arranged over a second endless apron. This endless apron carries the grain to the thresher.

Claim.—First, in combination with the rollers *c c* and frame A, the revolving smooth or sickle-edged knife F, substantially as described and for the purpose set forth.

Second, the L L, constructed and operated substantially as described.

Third, the vibrating table N, substantially described and for the purpose set forth.

Fourth, in combination with the vibrating table N, the vibrating fork or fingers Q, substantially as described and for the purpose set forth.

Fifth, the combination of the revolving knife E, rakes L, vibrating table N, vibrating fork or fingers Q, constructed and operated substantially as described.

No. 46,906.—W. W. HORTON, Freeport, Ill.—*Method of Transporting Oil.*—March 21, 1865.—This invention consists of a system of stationary tanks for receiving and storing oil, and movable tanks for conveying it from one receiving tank to another. The tank at the well is so arranged above the movable tanks that the oil may be readily run from it into the said movable tanks. The tank at its other end is below the level of the movable tanks, in order to receive the oil therefrom.

Claim.—First, oil tanks, both stationary and movable, constructed and operating as and for the purpose herein set forth.

Second, the method or process herein described for storing and transporting oil in bulk, substantially as set forth.

No. 46,907.—R. HUMPHREY, Unionville, Conn.—*Spoon.*—March 21, 1865.—This spoon is struck up out of sheet tin; the portion of the metal which constitutes the stem, in order to strengthen that point, being bent around so as to give to the reverse side the appearance of a narrow trough, while at the points of junction of the stem with the bowl and with the broad part of the handle the plate is swagged up so as to form bosses or protuberances for the purpose of further strengthening those points.

Claim.—A spoon or fork handle provided with a projection *d* at the juncture of its widest part with its stem, and with a similar projection at its juncture with the bowl, substantially as described.

No. 46,908.—W. W. Huse, Brooklyn, N. Y.—*Machine for Cutting Tobacco.*—March 21, 1865.—This invention consists in the combination of a non-rotating feeding screw, a rotating nut mounted thereon provided with a ratchet wheel, and also in an adjustable cam plate for determining the extent of the feed motion.

Claim.—The combination, substantially as herein described, of the non-rotating feeding screw, the rotating nut, mounted thereon, and provided with a ratchet wheel, the vibrating pawl or ratchet hand, and the adjustable cam plate for determining the extent of feed motion which shall be imparted to the ratchet wheel, for the purpose specified.

No. 46,909.—George N. Jennings, Virginia City, N. T.—*Process for Separating Gold and Silver from Mineral and Earthy Substances.*—March 21, 1865.—This invention consists in mixing the crushed ore with ashes and powdered charcoal, the mass being moistened with dilute acid. Alkali and mineral salts are sometimes added in solution. The mass is then exposed to a gentle heat, after which it is roasted and thrown, while hot, into dilute acid. The mixture is then allowed to settle for a short time, when the liquor and chloride of silver are drawn off. The solid portion is mixed with water several times and allowed to settle, the water and chloride being drawn off after each operation. The chloride of silver is then collected and reduced in the ordinary way. The matter remaining in the first vessel is treated with a solution of sulphate of soda and potassia, carbonate of soda, and sulphate of copper, salt and acid being applied to the mass before they are put into the solutions, and heat is then applied for the purpose of amalgamation.

Claim.—First, the process herein substantially described, for the purpose set forth.

Second, the use of ashes and charcoal as a flux in reducing quartz and other rock for separating gold and silver and other metals therefrom, substantially in the manner above described.

Third, the amalgamating solution, composed substantially as above described.

No. 46,910.—C. Kupferie and J. H. Ward, Cincinnati, Ohio.—*Steam Whistle.*—March 21, 1865.—This invention consists in the arrangement of two or more apertures of different size, formed in the lower end of the bell, in such a manner that different sounds are produced by the action of the steam issuing from the whistle. This is accomplished by supporting strips, which form a portion of the bell extending between the round apertures, and are secured into the bowl of the whistle, which connects it with the steam supply-pipe, so that the centre of the bell is kept perfectly free, and no central gearing is required,

Claim.—First, the bell C, constructed with supporting strips *d e*, dispensing with a central support, and forming a plurality of apertures *f g*, substantially as and for the purposes herein described.

Second, the shoulder *b*, of the plug B, and segmental annular spaces *c*, produced thereby between said plug and the bowl, substantially as and for the purpose set forth.

No. 46,911.—T. S. Lambert, Peekskill, N. Y.—*Letter Envelope.*—March 21, 1865.—This invention consists in having a flap or separate piece containing the postage stamp to be attached by gum to the ordinary sheet of paper on which the letter is written.

Claim.—Constructing a letter tab or flap, substantially as shown and described.

No. 46,912.—Henry S. Lawson, Baltimore, Md.—*Winders for Oyster Dredges.*—March 21, 1865.—In this invention the crank shaft and reel shaft are so arranged as to allow of the one reel being used to operate the dredge from the bow of the vessel, and the other reel being used to operate the dredge from the stern of the vessel, the entire force moving the crank shaft being thrown upon the one reel.

Claim.—The arrangement of the reel shaft and reels with the crank shaft and cranks, the whole being constructed and susceptible of being operated as herein set forth.

No. 46,913.—Peter Lear, Medford, Mass.—*Ventilator.*—March 21, 1865.—This apparatus is intended to be placed on a chimney top, and consists of a wind wheel at the bottom, by which it is revolved, composed of V-shaped flanges or wings to catch the wind; this wheel is surmounted by an inverted cone-shaped case, which terminates at the bottom in a vertical pipe, passing down through the wind wheel into the chimney flue; arranged radially inside this cone-shaped case are a number of flanges, fastened to the side of the case, and extending halfway to the centre; on the inner edges of these flanges rests a circular plate for deflecting the air; on the top of the cone-shaped case, supported by stanchions at intervals, is a dome-shaped weather cap. A spindle extends down through the centre of the entire apparatus, and is supported at either extremity by a suitable step; on this spindle the apparatus revolves.

Claim.—The combination as well as the arrangement of the wind wheel B, the conduit A, the inverted conical case D, and its series of radial flanges *b b*, the whole being applied to a spindle C, substantially as and so as to operate as herein before explained.

Also, the combination as well as the arrangement of the wind wheel B, the conduit A, the inverted conical case D, the series of radial flanges *b b*, and the deflector E, the whole being applied to a spindle C, substantially as and so as to operate as herein before specified.

Also, the combination as well as the arrangement of the wind wheel B, the conduit A, the inverted conical case D, the series of radial flanges *b b*, and the weather cap F, the whole being applied to a spindle C, substantially as and so as to operate as hereinbefore described.

Also, the combination as well as the arrangement of the wind wheel B, the conduit A, the inverted conical case D, the series of radial flanges or wings *b b*, the deflector E, and the weather cap F, the whole being applied to a spindle C, substantially as and so as to operate as herein before set forth.

No. 46,914.—CHARLES LEAVITT, Cleveland, Ohio.—*Lock-key Guard.*—March 21, 1865.—This invention relates to an adjustable, portable device, by which the key is prevented from being turned in the lock on the outside. The guard is suspended on a stem of the inside handle, and is formed of a strip of metal in the shape of a loop at one end, so that it can be placed in the bow of the key when the door is locked. The escutcheon and key holes are arranged on each side of the door in an angular position to each other.

Claim.—The guard D, in combination with the lock-key, and the escutcheon and key holes at right angles to each other, as and for the purpose set forth.

No. 46,915.—SAMUEL LENHER and HALLAM H. SPENCER, Philadelphia, Penn.—*Apparatus for Washing Paper Stuff.*—March 21, 1865.—This invention consists of the stuff tub, containing the agitators, and provided with an opening through which the stuff flows. Beneath this opening is an endless band of wire gauze moving over the drums; directly above this endless band is placed a tank, provided with roses, by means of which the stuff on the band is washed. The waste water passes through the seives into the tank, and the stuff passes on and falls into the box.

Claim.—First, the application of jets of water forcibly impelled against the stuff produced from refuse newspapers and waste paper in the manner hereinbefore described, for the purpose of separating from said stuff the coloring matters and carbonaceous particles of ink and other fine impurities and retaining the fibrous pulp on sieves, whether the latter be rectangular circular arranged as an endless band, or in any other form whatsoever, and whether the same be made of wire gauze or muslin, or any other textile fabric.

Second, the application of the above process, substantially as set forth, for the removal of dust and other like fine impurities from rag stuffs and other fibrous stuffs used in the manufacture of paper.

No. 46,916.—JAMES A. LITTLE, Danville, Ind.—*Fruit Gatherer.*—March 21, 1865.—In this device rake teeth are arranged upon the outer edge of a semicircular board, and a knife runs around midway of the teeth. The handle of the gatherer can be extended in length, by pins and guide bands.

Claim.—First, the raking device A B, employed substantially in the manner and for the purpose herein explained.

Second, the knives D F, employed as accessories to the fingers A, in detaching the fruit, as set forth.

Third, the extension rod C C′, in connection with the fruit gatherer as described, to adapt the device for gathering fruit from different heights.

No. 46,917.—LEWIS H. LITTLE, Copake, N. Y.—*Coffee Pot.*—March 21, 1865.—This invention consists in placing a body of conical-shape centrally within a coffee pot so as to leave an annular space between the base of the cone and the inner sides of the pot. The object is to prevent the sediment or grounds rising into the upper part when the coffe is poured out.

Claim.—Placing a cone within a coffee pot, for the purpose and in the manner substantially as above described.

46,918.—WM. H. LOOMIS, Fairfield, Iowa.—*Chaff and Straw Stacker.*—March 21, 1865.—This invention consists in placing removable wings, perforated with armholes, upon the sides of the elevators carrying the straw and chaff from threshing machines.

Claim.—First, a stacker, which is so constructed as to receive the straw and chaff from a threshing machine upon an elevator, and within chambers which are closed at their sides, substantially as described.

Second, the removable wings C C, in combination with a trunk which is adapted for receiving the straw directly from a straw carrier of a threshing machine, substantially as described.

Third, the armholes D D, through the wings C C, arranged substantially as and for the purpose described.

No. 46,919.—JAMES E. MADIGAN, Beloit, Wis.—*Apparatus for Bolting Flour.*—March 21, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—First, the bolting apparatus, herein described, consisting of the cylinder A, blast pipe G, air chest C, series of internal perforated pipes *b b b*, conducting pipe *g*, and external perforated pipe *d*, all combined and operating in the manner and for the purpose specified.

Second, so mounting the pipe *d* that it may be turned by a crank *i*, or other suitable means to deliver the blast at any angle desired.

No. 46,920.—JOSEPH MARTIN, New Oxford, Penn.—*Farm Gate.*—March 21, 1865.—This invention consists in so constructing a gate that it can be opened or closed in one direction by a person while riding in a vehicle or on horseback, as well as by a person on foot, by the application of cords and pulleys, said gate being latched when opened or closed.

Claim.—The automatic closing gate, which opens only in one direction, constructed with the several parts as described, so that it can be opened by a person approaching it from either side, and also latched open and unlatched, substantially as set forth and described.

No. 46,921.—THOMAS MAYOR, Pawtucket, R. I.—*Flyer for Roving Frames.*—March 21, 1865.—The object of this invention is to increase, as may be desired, the amount of friction on the yarn, in order to keep it from unwinding at the mouth of the tube, while at the same time it is drawn over a perfectly smooth surface, and thereby not likely to be broken in its passage.

Claim.—The combination of two or more lateral orifices in the neck of the flyer as described, at unequal distances from the mouth of the delivery tube with the said delivery tube, for the purposes specified.

No. 46,922.—RUTGER B. MILLER, Utica, N. Y.—*Manufacture from the Fibres of Epilobium.*—March 21, 1865.—This invention consists in making wicking, batting, and other articles, from the fibres of the plant epilobium. These fibres may be used alone, or combined with other fibres.

Claim.—The utilization of the fibre of the epilobium plant for the manufacture of the articles above enumerated, and for all articles to which it is applicable, as a substitute for the cotton fibre.

No. 46,923.—ADOLPH MILLOCHAU, New York, N. Y.—*Apparatus for Distilling Petroleum, &c.*—March 21, 1865.—This invention consists of two concentric cylinders for holding the oil, provided with escape pipes, which communicate with the coils in the condenser. The oil is supplied by means of the pipes.

Claim.—The distillation of heavy and light oils jointly to produce a burning oil by means of a second still within the main still for petroleum and similar oils, substantially as specified.

No. 46,924.—ALFRED MONNIER, Philadelphia, Penn.—*Process for Purifying Metallic Oxides.*—March 21, 1865.—This invention consists in first calcining the hydrated oxides, and then boiling them with a solution of caustic potassa or soda, or their equivalents. The insoluble portion is then separated by filtration, and to it is added a quantity of dilute hydrochloric or other acid to dissolve the caustic or carbonate of lime. The oxides thus treated are then calcined with the sulphuric acid or its equivalent, after which they are washed with water to remove the sulphate of magnesia. To remove the silica, the oxides thus treated are then calcined with caustic potash or soda, after which the whole mass is washed with water and boiled with dilute hydrochloric acid.

Claim.—The treatment of metallic oxides for their purification, substantially as set forth.

No. 46,925.—GEORGE M. MOWBRAY, Titusville, Penn.—*Oil Ejector.*—March 21, 1865.—This invention consists in the employment of a coupling, at the ends of the seed-bag, or other packing device, to which coupling the eduction pipe is secured, and through which the induction pipe passes, a stuffing box being provided to make a tight joint around it. By this arrangement the discharge nozzle may be adjusted from the surface, without disturbing the seed-bag or other packing, or removing the pipe from the bell.

Claim.—The coupling D, when combined with a stuffing box E, so constructed that while one pipe is fixed another may be moved in the stuffing box without disturbing the seed-bag or other packing, substantially as herein described and for the purpose set forth.

No. 46,926.—JOHN NAUGLE, Mooresville, Ind.—*Hand Cultivator.*—March 21, 1865.—This invention consists of a double-bladed hoe, made square upon one side, and pointed upon the other; it is firmly riveted to a short shank, by which it is screwed securely to the handle.

Claim.—As a new article of manufacture, the herein described hand cultivator, when constructed substantially as set forth.

No. 46,927.—MARCUS ORMSBEE, New York, N. Y.—*Washing Photographic Prints.*—March 21, 1865.—This invention consists in placing photographs between folds of India-rubber, through which a stream of water is passed, while they undergo the pressure of the elastic rollers.

Claim.—First, the elastic yielding rollers C C journaled within the frame D D′, in the manner explained and employed in the process of washing photographic prints, substantially as set forth.

Second, in combination with the above, the elastic or impervious cloth A, to contain the prints between its folds and receive the direct pressure of the rollers, as and for the purpose described.

No. 46,928.—M. S. Orton, Galesburg, Ind.—*Hand Corn Planter.*—March 21, 1865.—In this invention a perforated plate is made to revolve over the perforated bottom of the planter by means of an inclined rod working in a lip upon the plate, at the same time that the inserters are opened and shut. Upon the pivot through the centre of the movable plate are arranged bent arms that sweep the seed over the holes at each revolution.

Claim.—The perforated plate B. operated substantially as shown, in combination with the perforated bottom *b* of case A, and seed spouts E, arranged to open and close through the movement of the plate B, substantially as and for the purpose set forth.

Further, the arms *m* applied to the pin *l* of plate B when used in combination with the spouts E, and all arranged to operate in the manner substantially as and for the purpose specified.

No. 46,929.—Samuel N. Page, Salona, Penn.—*Havesting Machine.*—March 21, 1865.—This invention consists in arranging two crank wheels upon one and the same shaft, one on either end, with the pinion which receives motion directly from the drive wheel placed between them; the drive wheel is moved on its shaft to or away from the pinion for throwing in or out of gear by an arrangement of levers.

Claim.—First, in combination with the driving wheel A, adapted for adjustment upon its shaft in the manner explained, the crank wheels D D′ fixed upon one and the same rotating shaft *d*, the latter carrying a pinion *d′* to receive motion from the driving wheel A, as set forth.

Second, in combination with the above parts, the lever H and rack H′ *h′*, constructed, arranged, and employed substantially in the manner and for the purposes herein described and represented.

No. 46,930.—Samuel N. Page, Salona, Penn.—*Raking Attachment to Harvester.*—March 21, 1865.—This invention relates to the devices employed for communicating the necessary motions to a vibrating sweep rake, which devices are identified by the claim.

Claim.—The combination of the slotted bar L and crank arm L′, the latter carrying a wrist pin *l*, which actuates said bar L for the purpose of operating the rake I, in the manner explained.

No. 46,931.—F. S. Pease, Buffalo, N. Y.—*Oil Ejector.*—March 21, 1865.—In this invention the principal feature consists in closing the bottom of the bell tube in which the ejector is located below the delivery of the steam by a valve. This valve is annular in form, and its internal diameter is made to fit snugly but work freely upon the steam pipe which passes through it, and when the instrument is in operation the valve rises from its seat and allows the fluid to pass up to be ejected, but upon shutting off the steam it immediately falls to its seat and prevents the oil from running out of the instrument, thus facilitating the starting of the operation.

Claim.—In oil ejectors closing the well tube below the place of delivery of the currents of air or other fluids or liquids by means of a valve, substantially as described.

No. 46,932.—Horatio O. Perry, Buffalo, N. Y.—*Variable Cut-off Valve Gear for Steam Engines.*—March 21, 1865.—This invention consists in constructing the tappets by which the cut-off valve is raised in two separate and independent parts, so that in their movement by the lifting tappets which are on the rock shaft one is free to descend while the other is ascending, thus allowing each tappet to remain in constant contact with the one lifted. In combination with these tappets a tripping device is so arranged as to relieve the tappets, which can be done at any desired point in the stroke of the piston, thus allowing steam to follow the piston through any desired portion of its stroke.

Claim.—First, the combination with the rocking steam toes having a motion coincident (or nearly so) with the piston of two independent steam lifting toes acting upon one valve stem in such a manner that as one ascends the other will descend, by which construction and the operation of an appropriate adjustable tripping device the steam may be cut off at any required part of the stroke.

Second, in the combination with the independent steam lifting toes E′ of the spring catches G and spring bolt J, and adjustable tripping cams H, operating for the purposes and substantially as described.

No. 46,933.—John G. Perry, South Kingston, R. I.—*Mowing Machine.*—March 21, 1865.—This invention consists in connecting the cutting apparatus with the main frame by means of a supplementary frame and vertically sliding plate, supported by the tubular axle of the inner supporting wheel and the front inner corner of the main frame in such a manner as to bring the cutters in line with the tubular axle, and in giving motion to the cutters by means of an escapement wheel, rock shaft, a pitman passing through the tubular axle, and a vibrating lever.

Claim.—First, the arrangement of the escapement wheel X, rocker shaft V, and connecting rod P, in combination with the stationary tubular axle K, substantially as herein set forth and for the purpose specified.

Second, the arrangement of the frame D and sliding plate I, having the standard *a* and lever O attached to it, in combination with the tubular axle K, substantially as herein described and for the purposes set forth.

No. 46,934.—JOHN G. PERRY, South Kingston, R. I.—*Stove-pipe Elbow.*—March 21, 1865.—This invention consists of a cast metal skeleton frame, the interstices being filled or lined on the inside with pieces of sheet metal or suitable mineral substance.

Claim.—First, making a cast metal stove-pipe elbow frame by leaving openings through its surface, substantially as herein described and for the purposes set forth.

Second, closing the opening through the sides of a cast metal stove-pipe elbow frame with a piece or pieces of sheet metal, or any suitable mineral substance, substantially as herein described and for the purposes specified.

No. 46,935.—WILLIAM H. PERRY and WALLACE WORDSWORTH, Los Angelos, Cal.—*Washing Machine.*—March 21, 1865.—This invention consists in forming the tub in two chambers, one in which the clothes are washed, and a lower one into which the sediment enters, which sediment can be drawn off at any time by an extra faucet.

Claim.—Providing a washing machine with a chamber M to receive the water after it has been expressed from the clothes and retain the sediment, substantially as described.

No. 46,936.—GEORGE K. PETERSON, San Fancisco, Cal.—*Quartz Crushers.*—March 21, 1865; antedated March 3, 1865.—This invention consists in the arrangement of two vibrating plates, secured in a framing so that the surfaces of the plates shall rub together and thereby perform the crushing. The two plates are provided with journals at their upper corners, fitted to work in the side of the frame or boxes on the frame. Near the lower edges of the crushers are placed journals, which are provided with boxes connected by rods furnished with nuts to adjust the plates. To one of the plates there is attached a rod which connects the plate to the crank that vibrates the plates when the machine is operated.

Claim.—The crushing plates A A′, connected and arranged to operate substantially as described for the purpose set forth.

Also, the mode described of connecting the journals K K of the plates A A′, or such an equivalent device as will enable the operator to lengthen or shorten the rods which connect the journals K K.

No. 46,937.—NORMAN PLATT, St. Louis, Mo.—*Plough.*—March 21, 1865.—In this plough the land side extends forward to form the colter, which is slightly convex on its edge, starting from the point upward at an angle of about forty-five degrees, and gradually curving more nearly to a horizontal line.

Claim.—The combination of the frame *b*, plate *a*, and colter *a′*, the several parts being constructed and arranged as and for the purpose set forth.

No. 46,938.—A. D. PUFFER, Somerville, Mass.—*Sirup Valves.*—March 21, 1865.—In this invention the connection with the sirup vessel is effected by having the interior enlargement packed next the aperture, and by pressing the external washer up by means of a screw collar. Vent is admitted to the upper part of the nozzle to facilitate the flow through a tube which runs within the vessel, and thence upward to the air, protected and concealed in its whole course.

Claim.—The shouldered, hollow screw plug, with its packing, the washers *d*, the screw collar *e*, and the screw thread on the valve case body, when arranged with a sirup valve or faucet, substantially as shown and specified.

Also, conducting the air tube, which facilitates the emptying of the measuring chamber, through the passage of the valve case, substantially as and for the purpose described.

No. 46,939.—A. D. PUFFER, Somerville, Mass.—*Grate Bars.*—March 21, 1865.—This invention consists of a bar recessed on the top, the reversed side being arched underneath, and the edges of the bars being sharpened or bevelled.

Claim.—In a recessed bar, the reversed arched form given to the bifurcated portion thereof, for the purpose described.

Also, sharpening or bevelling the surfaces of the bar upon which the coal is supported into thin edges, for the purpose set forth.

Also, the radiating braces *h*, substantially as shown and described.

No. 46,940.—A. PUTNAM, Jr., Chester, Vt.—*Tobacco Hooks.*—March 21, 1865.—In this invention the hook differs in a slight degree from clothespins, tongs for lighting pipes, &c. The improvement consists in turning the ends inward and making them sharp, so that they will penetrate the stem of the plant. They are made of wire, and cross each other twice, so that by compressing the middle the plant is released. The bow end may be hooked upon a nail or other support.

Claim.—The tobacco hook, constructed and operated substantially as above described, as a new article of manufacture.

No. 46,941.—William E. Reynolds, Chicago, Ill.—*Heat Radiator for Stoves.*—March 21, 1865.—This invention consists of a drum with two vertical tubes extending from side to side, one nearly, and the other quite, to the bottom. The tubes are closed at the bottom and open at the top. Perforations in the side of the drum admit air to the lower parts of the tubes. The heat and products of combustion entering the drum at the bottom circulate up and down through the passage formed by the tubes to the exit pipes.

Claim.—An air heating drum or radiator, formed or composed of tubes *a a'* arranged within a cylinder or drum, so as to form flues or draft passages *e f h* around the tubes, the latter being perforated at their lower ends for the admission of cold air, and open at their upper ends for the escape of the heated air, substantially as shown and described.

No. 46,942.—William E. Richardson, Chicago, Ill.—*Machine for Cutting Meat.*—March 21, 1865.—A circular saw is used for cutting the meat, and in order to prevent the meat from pressing against the saw spreaders are affixed upon each side upon which the meat rests while being cut. These spreaders separate as the carriage bearing the meat is moved forward, keeping the meat from contact with the sides of the saw.

Claim.—The employment of a circular saw for cutting meat or other like substances, in combination with contrivances for spreading said substances during the operation of sawing, and keeping its surfaces from forcible contact with the sides of the saw, substantially as described.

No. 46,943.—Moritz Rino, Williamsburg, N. Y.—*Manufacture of Vinegar.*—March 21, 1865.—This invention consists in the use of tannin, to precipitate the gluten in the beer, or other material from which the wash used in the quick process is made.

Claim.—The manufacture of vinegar by the quick process directly from the natural unmanufactured or unrefined vegetable produce which contains starch or saccharine matter, or both starch and saccharine matter, substantially in the manner herein described.

No. 46,944.—J. M. Rose, New York, N. Y.—*Frames for Gathering Skirts.*—March 21, 1865.—In this invention a metal or other spring zone is made adjustable, one end to slide upon another, with a gauge to indicate the measure that the zone may be reset when removed from the person. On the exterior is a groove to receive an elastic cord that confines the upper edge of the skirt, and retains the plaits and gathers when formed. A series of clasps fit down upon the zone, clasping the convexity of the groove inside and binding the plait or gather outside during the basting process.

Claim.—First, the frame for gathering and plaiting the skirts of dresses, constructed and operated substantially as above described.

Second, in combination with the frame, the elastic cord B, or any equivalent means of holding the plaits and gathers of a skirt in place, substantially as above described.

Third, the clamp D, one or more in combination with the said frame for the purpose of holding the skirt thereon, constructed and applied substantially as above described.

No. 46,945.—Thomas Rowe, Brooklyn, N. Y.—*Apparatus for Triturating and Heating Linseed.*—March 21, 1865.—In this invention, after the seed has been triturated sufficiently, it is raked down upon a chauffer pan, which has a steam jacket. Here it is agitated by a stirrer rotating on a vertical arbor.

Claim.—The combined arrangement of the chauffer pan E, heated by steam or other means, and the platform D of the triturating apparatus, in the manner and for the purpose substantially as herein shown and described.

No. 46,946.—Richard Schaap, Jr., Brooklyn, N. Y.—*Combined Shovel and Ash Sifter.*—March 21, 1865.—This invention consists of a combined shovel and ash sifter, composed of a shovel blade perforated and provided with a perforated sliding plate beneath, by which the perforations in the shovel blade can be closed at pleasure, and a sifter or solid bottomed shovel produced at will.

Claim.—A combined shovel and ash sifter, composed of a shovel blade perforated and provided with a perforated sliding plate, substantially as herein set forth.

No. 46,947.—Frederick H. Schroeder, Bushnell, Ill.—*Hopper for Grain Separators.*—March 21, 1865.—This invention consists in placing adjustable feed rollers under the opening in the hopper, to secure an even distribution of grains upon the seives.

Claim.—The employment of the rollers D and E in combination with the seed hopper A, when arranged and operating substantially as and for the purposes set forth.

No. 46,948.—Charles Sears, Monmouth county, N. J., and Tappen Townsend, King's county, N. Y.—*Buckles.*—March 21, 1865.—This invention consists in making a double acting lever for buckles, attaching the same to the buckle frame, and having a concave strap-bearing surface.

Claim.—First, a double acting lever for buckles.

Second, a concave strap-bearing surface upon buckle frames.

Third, making and attaching the double lever to the buckle frame, in form and manner substantially as described.

Fourth, the combination of the double acting lever with buckle frames, thus making buckles with double acting levers, substantially as described.

No. 46,949.—ALEXANDER SHILAND, West Troy, N. Y.—*Drills.*—March 21, 1865.—This invention consists of a drill head working within a cylinder, and made to rotate automatically through the agency of a spiral bar working between parallel bars. Segments or grooves are arranged within said cylinder, which receives an upward and downward motion in any desired manner.

Claim.—The combination of the tube A with the inner shaft B, having the spiral part C acting between parallel bars, segments, or grooves; these parts, or their equivalents, arranged and operating as and for the purpose set forth.

No. 46,950.—DANIEL E. SOMES, Washington, D. C.—*Cooling, Drying, and Ventilating Granaries and other Buildings.*—March 21, 1865.—This invention consists in constructing granaries with means for cooling the air to be used in ventilating them, and also in the arrangement of ventilating flues, or channels, so that the air can permeate the grain in the bulk and so that the cooling and drying can be carried on at all times without removing the grain from the building.

Claim.—First, constructing granaries and similar buildings with bins or apartments containing air passages, flues, or channels, so as to furnish means for cooling and ventilating them, substantially as set forth.

Second, cooling and ventilating granaries or buildings for storing grain by means of air compressed and dried, substantially as herein set forth and described.

Third, cooling the air for ventilating granaries by means of subterranean coolers, as set forth and described.

Fourth, in combination with devices for cooling and introducing air into granaries, suitable channels for carrying off any moisture that may be deposited, so as to prevent its coming in contact with the grain.

Fifth, drying air to be used in ventilating granaries by means of hygrometic or absorbent materials, as set forth.

Sixth, in combination with multiple walls, any or all of the devices herein described for cooling and ventilating granaries and other similar buildings.

Seventh, constructing bins or apartments for grain or other materials to be injured by being kept in a close chamber, with a system of cooling and ventilating devices, substantially as herein set forth and described.

No. 46,951.—REUBEN SPARKS, Buffalo, N. Y.—*Machine for Sharpening Saws.*—March 21, 1865.—This invention consists of a circular stone or other grinding wheel of suitable shape, on a driving mandrel, mounted upon a platform in which are grooves containing sliding bars parallel with the axis of the shaft of said stone. Across these bars and pivoted thereto is another bar, attached in such a manner that it can be placed at any desired angle, horizontally, to the saw. This bar acts as a guide to a circular table, having a groove in its lower surface into which the guide-bar fits, and along which the table slides with the saw centered upon it in the proper position for the teeth to be presented to the grinding surface.

Claim.—The combination of the grinding wheel B, sliding saw-table C, or C′, and adjustable guide-bar D, for the purposes and substantially as set forth.

No. 46,952.—N. STARBUCK, Wilmington, Ohio.—*Churn Dasher.*—March 21, 1865.—This invention consists in a churn dash placed loosely on its staff, so that it may rotate thereon under the action or resistance of the cream while being operated or worked up and down therein.

Claim.—The knob B, or an equivalent support on the lower end of the rod or staff B′, in connection with a rod C, passing through the rod or staff and a groove, *c*, or equivalent pins or projections on the upper surface of the dash, all arranged to operate in the manner substantially as and for the purpose set forth.

No. 46,953.—LE ROY S. STARRET, Newburyport, Mass.—*Butter Worker.*—March 21, 1865.—This invention consists in the employment of an oblong box provided at each side above its upper edge with a rail, between which rails and the top of the box there is placed a shaft or bar, having a lever, attached to which is suspended a pressure plate, all being arranged in such a manner as to admit of the work being performed expeditiously.

Claim.—The box A, provided with the rails B B, in combination with the shaft or bar C, with lever D attached, and the latter having the plunger F connected to it, all being arranged to operate in the manner substantially as and for the purpose herein set forth.

No. 46,954.—GEORGE STOVEL, Chicago, Ill.—*Gate.*—March 21, 1865.—This invention consists in hanging a horizontally-swinging gate at such a distance from the ground that the opening and closing thereof will not be impeded by the snow upon the ground, and em-

ploying in combination therewith a vertically adjustable gate, for the purpose of closing the space between the lower part of the swinging gate and the ground.

Claim.—The combination and arrangement of the swinging gate A B with the vertically adjustable gate E, operating substantially as and for the purposes herein specified and shown.

No. 46,955.—A. W. TODD, Chicago, Ill.—*Machine for Winding Sewing Machine Bobbins.*—March 21, 1865.—In this invention either the shuttle-bobbin or disk-bobbin can be filled with thread by the machine. The traversing thread-guide is adjustable to vary the length of traverse. The frame carrying the spindle is hinged to allow the shifting of the graduated cone pulley when a different sized thread is to be wound. The small pinion on the main shaft may be shifted laterally and out of gear for the purpose of stopping the motion of the thread-guide.

Claim.—The combination and arrangement of all the parts of the machine, as and for the purpose described.

No. 46,956.—JOHN TREADWAY, Haverstraw, N. Y.—*Molding and Pressing Brick.*—March 21, 1865.—This invention consists in a weighted lever, in combination with a rock shaft and its arms and a cam lever, operated by a crank to force out the moulds from under the grating, which operation cuts off the clay, and to prevent the machine from being broken in case a hard substance should happen to get partly in the moulds and partly in the grating. It also consists in a platen with two standards, with cross grooves to receive a wedge-key, in combination with the connecting rod adapted to slide between the said standards.

Claim.—In that part of the above-described machinery for driving out the moulds, the weighted lever, in combination with the rock shaft and its arms, or the equivalents thereof, and the cam lever operated by the crank, substantially as described and for the purpose set forth.

Also, the platen with its two standards, with cross grooves to receive the wedge-key, in combination with the connecting rod, adapted to slide between the said standards, and provided with projecting pins adapted to slide in longitudinal grooves in the standards, as and for the purpose described.

No. 46,957.—JOANNA B. TRIBBLE, Middleborough, Mass.—*Composition for Preventing Disease in Vegetables.*—March 21, 1865.—This invention consists of wood ashes, slacked lime, sulphur, and chloride of sodium.

Claim.—The said composition, made and for use substantially as specified.

No. 46,958.—THOMAS TRIPP, Chicago, Ill.—*Car Coupling.*—March 21, 1865.—This invention consists in a mode of constructing the draw head of the coupling, and in an arrangement therewith of the coupling link and hooks whereby the coupling of the cars may be effected automatically, while at the same time the coupling is adapted to connecting together cars of different heights, and permits a free and sufficient lateral motion when moving round a curve.

Claim.—First, providing the drawhead A with the vertical slot S, constructed, arranged, and operating as and for the purposes specified and shown.

Second, the combination of the drawhead A and link D, constructed, arranged, and operating substantially as and for the purposes shown and described.

Third, the combination and arrangement of the drawhead A, hook B, and link D, constructed and operating as and for the purposes delineated and set forth.

Fourth, the combination of the drawhead A, hook B, and spring C, arranged and operating as and for the purposes shown and described.

No. 46,959.—LUTHER C. WALKER, Baltimore, Md.—*Tobacco Pipe.*—March 21, 1865.—In this invention the bowl, immediately in rear of the cavity for tobacco, is a cylindrical vertical chamber, the bottom of which is closed by a hollow bulb for nicotine. Two small passages lead from the tobacco cavity to this chamber, converging as they approach it; this chamber is connected with the mouth-piece by a single passage; the opening in the mouth-piece is on the top, and in said mouth-piece there is also a small cavity for nicotine.

Claim.—First, the converging apertures *a a* in combination with the chamber C and channel *b*, the whole being arranged as set forth.

Second, forming a pipe stem with chamber *b* opening at the upper side of the stem, as at *b'*, instead of at the end, substantially as described.

Third, providing the mouth-piece of a pipe stem with a cavity *b2*, in the manner and for the purpose explained.

No. 46,960.—THEODORE WALLIS and THOMAS WITBECK, Scipio, N. Y.—*Hand Shears or Nippers.*—March 21, 1865.—This invention consists in pivoting the short arms of two levers reaching to the opposite shear blade, while the toothed segmental fulcra attached to the levers play in corresponding toothed racks on the end of the adjoining shear blade.

Claim.—The toothed segmental fulcrumed levers B, in combination with the shears, and attached thereto and operating thereby the stirrups, all constructed as herein described.

No. 46,961.—PHILIP WALTER, New York, N. Y.—*Waterfall Head-dresses for Ladies.*—March 21, 1865.—The stuffing or pad is arranged in the desired form, and enveloped in a suitable sack. Horse-hair of suitable length is arranged and doubled, and secured at the doubled part to the upper inner side of the sack, and then carried upward and bent downward outside, and carried inward and upward again and secured to the lower part of the inner side of the pad.

Claim.—First, the use, in the manufacture of waterfalls, of strands of horse-hair C doubled up at the upper edge of the pillow or stuffing and secured to the same by binding *a b c d*, substantially as and for the purpose set forth.

Second, in combination with the above, the employment in waterfalls of stuffing enclosed in a case of gauze or other textile material, substantially as and for the purpose described.

No. 46,962.—THOMAS S. WILES, Troy, N. Y.—*Neck-tie.*—March 21, 1865.—This invention consists in the construction and arrangement of a neck-tie with a loop to receive the ends of the said tie attached thereto in a durable manner, and each so combined with a collar for gentlemen's wear as to allow an expansion of the parts thereof for laundrying purposes.

Claim.—First, the neck-tie B, with the loop C, attached to the collar A, the said tie being susceptible of expansion for laundrying, all arranged and combined in the manner substantially as and for the purposes herein described and set forth.

Second, the employment of the loop C, arranged and combined with the neck-tie B at the upper edge thereof, in the manner substantially as and for the purposes herein described and set forth.

No. 46,963.—ABRAM WING, Mayville, N. Y.—*Dressing Mill Stone.*—March 21, 1865.—This invention will be understood by referring to the claim and engraving.

Claim.—The described method of dressing mill stones, consisting of the narrowed lands *a*, extending in full height to the eye C, in combination with the tangential and intermediate inclined furrows *b* and *e e*, widened toward the eye, and gradually narrowing outward to the periphery of the stone, substantially as and for the purposes herein specified.

No. 46,964.—ORSON H. WOODWORTH, Columbia City, Ind.—*Fence.*—March 21, 1865.—This invention consists in the application to a fence of two posts, one permanent, the other movable, placed through a slotted brace, and wedged together in such a manner that, by withdrawing the said wedges, the fence can be readily taken down and put up at pleasure.

Claim.—The combination and arrangement of the permanent jaw *o*, the movable jaw *i*, the block *m*, and the keys *n n*, substantially as described and shown.

No. 46,965.—GEORGE WRIGHT, Washington, D. C.—*Time Fuse for Explosive Shells.*—March 21, 1865.—This invention consists in placing a straight time fuse column within a longitudinal groove or recess in the side of the shell, and communicating with the interior explosive charge of the shell at its forward extremity. The fuse is graduated and punctured when ready for use in the same manner as the Bowman fuse.

Claim.—The longitudinal time fuse B, constructed and located substantially as described for the purpose set forth.

No. 46,966.—A. BEEKMAN, assignor to THEODORE and CHARLES WENZEL, New York, N. Y.—*Sawing Machine.*—March 21, 1865.—The object of this invention is to saw curved stuff; and it consists in attaching a rack to a radius bar which is operated by a crank on a shaft, upon which is a pinion gearing into the rack, so that by turning the crank the radius bar is allowed to describe a curved line.

Claim.—The rack C, in combination with the pinion G and strap D, placed on the vertical shaft E, and all arranged with the radius bar B, to operate in the manner as and for the purpose herein set forth.

No. 46,967.—EDWARD CROFT, assignor to BENEDICT AND BURNHAM MANUFACTURING COMPANY, Waterbury, Conn.—*Machine for making Beaded Wire.*—March 21, 1865.—This invention consists of a pair of rolls, each with a semicircular groove winding spirally around it so as to form in appearance a series of adjoining grooves. It also consists in gradually increasing both the width and pitch of the groove from one end to the other, so that the wire entered upon the rolls and on a line and parallel with their axis will be caught by the groove of least pitch and be gradually drawn through and rolled until it emerges from the other end of the rolls in a finished state.

Claim.—First, a machine for producing beaded wire, having a connected series of gradually increasing semicircular grooves adapted to act successively upon the beads, in the manner herein described.

Second, the helical graduated grooves *h h'* in the peripheries of the rollers B B', revolving in the same direction, and operating substantially as and for the purpose set forth.

No. 46,968.—CHARLES E. FOSTER, assignor by mesne assignment to GEORGE O. EVANS and W. S. HASSEL, Philadelphia, Penn.—*Boring Wells.*—March 21, 1865.—This invention

consists in the drill rod being turned partly round at intervals without being manipulated by an attendant.

Claim.—First, the movable plate G in combination with the dogs J J, or their equivalents, when combined and operating substantially as described, for the purpose specified.

Second, the shaft H, with its worm *i* and pinion *h* and stationary rack *m*, in combination with the plate G, the whole being arranged and operating substantially as set forth.

No. 46,969.—F. GROVES, assignor to CHARLES A. DIEHL, New Oxford, Penn.—*Cane-juice Evaporator.*—March 21, 1865.—This invention consists of a series of pans placed one above the other over a furnace. A pipe passing through the furnace is connected with the highest pan, so that the juice can be delivered to the said pan in a boiling condition. The juice is allowed to flow from this pan into the next one below it, and the evaporation is finished in the lowest pan of the series. The fire door is so arranged in combination with other doors, as to regulate the heat and cause the scum to flow into the scum boxes.

Claim.—First, the combination and arrangement of heating pipe *c* through the furnace with a series of pans, one above the other, substantially as described.

Second, the arrangement of the oblong pans H H, &c., with openings on alternate sides, so as to keep the juice flowing briskly as it is evaporated.

Third, the fire door *o o*, in combination with doors A and A A, so as to regulate the fires and throw off the scum, as described.

No. 46,970.—A. W. HALL, New York, N. Y., assignor to BENJAMIN W. ROBINSON, South Reading, Mass., and CHARLES W. CLARK, Brooklyn, N. Y.—*Device for Moving Churn Dasher.*—March 21, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—First, the employment or use in a churn, provided with a rising and falling dasher, of a spring attached to the dasher rod, and a plurality of hooks, applied to any suitable fixture, to admit of the suspension of the spring at different lengths, substantially as and for the purpose specified.

Second, the graduating of the spring, or lengthening and shortening the same, in connection with one or more hooks or points of suspension, substantially as and for the purpose set forth.

No. 46,971.—ORANGE B. HUBBARD, assignor to himself, LYMAN S. SMITH, and LUCAS J. MCMASTERS, Lowell, Mass.—*Loom.*—March 21, 1865.—The object of this invention is to ease the blow of the shuttle, and therefore avoid the consequent damage to the picker and its staff, and the liability to upset and tangle the yarn on the shuttle bobbin. The spring H, as arranged, relieves the blow, and is susceptible of adjustment higher or lower, or to or from the staff, by means of the screws or inclines.

Claim.—The combination and arrangement of the adjustable spring H, the clasp I I, and picker staff E, substantially as herein set forth and for the purpose specified.

Also, the method of adjusting the spring H, substantially as herein set forth and for the purpose specified.

No. 46,972.—ALLEN PARTRIDGE, assignor to himself and BUTTERFIELD & HAVEN, Boston, Mass.—*Mallet.*—March 21, 1865.—This invention consists in making a mallet by pressing raw-hide together in thickness enough to make the required size of a mallet; a rod is then inserted centrally through the hide, on which are iron plates that hold the hide firmly between them by means of a nut and screw.

Claim.—As a new article of manufacture, the mallet, constructed substantially as herein described.

No. 46,973.—SAMUEL R. PERCY and WALTER S. WELLS, assignors to GEORGE R. PERCY and WALTER S. WELLS, New York, N. Y.—*Process for Obtaining the Condensed Extract of Hops.*—March 21, 1865.—In this invention the hops are placed in an air-tight vessel, and the air then exhausted; warm or cold water is then introduced, which should be kept heated by the admission of steam, and the hops allowed to steep for two or three hours, the heat being about the temperature of boiling water in vacuo. A small quantity of alkali or alkaline salt should be added to the water. When the hops are sufficiently steeped, a vacuum is formed in a vessel or receiver, connected with the steeping vessel, and the extract thereby drawn off without exposure to the air. This operation is repeated as often as necessary, and the the extract then concentrated with or without the addition of saccharine matter.

Claim.—First, the process of making a condensed extract of hops by a continuous vacuum and exhaustion, whether with or without the addition of alkali or alkaline salts, molasses, saccharine matter, or the extracted liquor of grain, or with or without the addition of one or all of these, such process being vastly superior to any other, and contains the fine aroma of the hops, which is entirely lost and dissipated when made in the open air.

Second, the use of steam in the steeping vessel to exhaust the properties and virtues of the hops.

Third, the use of alkali or alkaline salts in the water or steam used in extracting the essential qualities of the hops, as it tends to make the resin of the hops more soluble, and also counteracts the acid in the molasses or other saccharine matter.

Fourth, the process of coating or covering the inner surface of the vacuum condensing pan with any oily or fatty substance to prevent burning, &c.

Fifth, the commingling of a sufficient quantity of molasses, saccharine matter, or the extracted liquor of grain, whether malted or not, to the watery extract of hops.

No. 46,974.—IRA C. PRATT, assignor to J. M. CAMPBELL, D. MOOBERY, E. EMERSON, and H. REEVES, Morton, Ind.—*Sulky Gang Plough.*—March 21, 1865.—In this invention one or more ploughs are attached directly to the rear of the draught pole. An oblique bar is fastened to the rear of the draught pole, and serves for carrying other ploughs. This bar is adjustable by rods and nuts, so as to increase or lessen the distance between the ploughs. A lever with a cam working over the axle carries the draught pole with the bar and all the ploughs.

Claim.—First, attaching one or more ploughs E, direct to the draught pole C, when the latter is connected to the main frame A, and all arranged to operate as and for the purpose set forth.

Second, the oblique bar D, attached to the rear part of the draught pole C, and having a plough E secured to it, and arranged as shown, so as to be capable of being adjusted substantially as and for the purpose specified.

Third, the lever H, with cam I attached, arranged and applied to the draught pole to operate in relation with the axle *a* of frame A, and for the purposes specified.

No. 46,975.—C. G. REINHOLD, assignor to himself and JOHN F. SHARRETS, assignors to themselves, and CLIFFORD ARICK, Milton, Penn.—*Asphaltic Cement.*—March 21, 1865.—This invention consists in boiling coal tar until it will form when cold a hard tough mass; it is then mixed with pulverized brick, plaster, clay, Roman cement, plumbago, marble, or similar substance, and run into moulds while hot.

Claim.—First, the use of distilled or inspissated coal tar, secured by the process of boiling, which when compounded with a calcareous earth, while hot, may be reduced to lumps or loaves of cement, substantially as and in the manner and for the purposes described.

Second, combining with these pulverized earths plumbago for the purpose of uniting the same when combined with inspissated coal tar, reducible to lumps or loaves of cement when cold, substantially as and in the manner and for the purpose described.

Third, combining with these pulverized earths, pebble stones, sand, crushed stone, granite, or other concreted earthy matter, for the purpose of uniting the same when combined with distilled or inspissated coal tar, reducible to slabs or blocks of stone when cold, substantially as and for the purpose described.

Fourth, combining with these pulverized earths, pebbles, sand, crushed stone, or other concreted earthy matter, as described, plumbago or other analogous substance, for the purpose of uniting the same when combined with inspissated coal tar, reducible to slabs or blocks of stone when cold, substantially as and for the purpose described.

Fifth, as an article of manufacture, trade, or commerce, the said "asphaltic cement," compounded and manufactured as described, when reduced to lumps or loaves, as set forth.

Sixth, as an article of manufacture, trade, and commerce, the said "asphaltic stones," compounded and manufactured as described, when reduced to any desired form and size, substantially as and for the purpose described.

No. 46,976.—WARREN A. SIMONDS, assignor to himself and S. INGERSOLL LOVETT, Boston, Mass.—*Apparatus for Carburetting Air.*—March 21, 1865.—This invention consists of a vessel for containing the hydro-carbon liquid, the said vessel communicating with a carburetting vessel, by means of the pipes, which consists of a close box of any shape, divided by a partition into two compartments, said partition extending nearly to the bottom of the box. Each compartment is provided with partitions of wire gauze. The hydro-carbon liquid enters through the pipes, and the air is forced into one compartment through a pipe, and flows through the box. The blast is produced by means of a dry meter or pump, or other suitable means.

Claim.—First, the arrangement and combination of the reservoir generator air pump and force pump with the pipes connecting the same, substantially as described.

Second, in combination for the purpose of constituting a carburetting apparatus suitable to steamboats, ships, &c., the reservoir generator air pump, or dry meter and receiver, or their equivalents, substantially as described.

Third, the combination of the receiver generator air pump reservoir and force pump, or their equivalents, substantially as described.

Fourth, the process of throwing back or returning the unabsorbed portion of the fluid employed to the head or upper reservoir, without exposing it to the air, and therefore without loss of vapor or material by means substantially as described.

Fifth, in combination the use of pipes connecting the reservoir to equalize the atmospheric pressure in all of them, substantially as described.

Sixth, as new the combination of reservoirs to be used as distributors, generators, and receivers, as above described.

Seventh, the pump in connection with the receiver and distributor, as above described in specifications, substantially as described.

Eighth, as new the combination of gearing and pumps in the direct production of gas, substantially as described.

No. 46,977.—DAVID WILLIAMSON, assignor to MOORE'S PATENT FIRE ARM COMPANY, Brooklyn, N. Y.—*Breech-loading Fire-arms.*—March 21, 1865.—This invention is designed as an improvement on the patent of D. Moore, of December 3, 1861, in which a movement of the trigger-guard lever slides down transversely a key-block, and then withdraws longitudinally the breech-block, and it consists in pivoting the lever to the breech-block, instead of to the stock, and connecting it to the key-block by a shifting fulcrum, and also in so applying a spring to the same as to assist both in opening and in closing the breech.

Claim.—First, the combination of the breech-blocks *d* and *e*, and lever *h* having a changeable fulcrum and actuating the said blocks *d* and *e*, substantially as specified.

Second, the spring *l* and the toe *n*, or its equivalent, in combination with the lever *h*, and breech blocks *d* and *e*, as specified.

No. 46,978.—THOMAS EDWARD VICKERS, Sheffield, England.—*Manufacture of Ordnance.*—March 21, 1865.—This invention consists in reheating the gun after it has been bored out, in an annealing furnace, and cooling the same while yet in the furnace, by passing a current of water through the bore.

Claim.—Reheating gun blocks, made from cast steel or other metal or alloy, either cast or wrought, and cooling the same while in the annealing furnace, in the manner described.

No. 46,979.—FREDERICK OLDFIELD WARD, London, England.—*Process of Liberating Potash or Soda from Alkaline Silicate.*—March 21, 1865.—This invention consists in mixing with the silicate to be treated, fluoride of calcium and earthy material; the earthy material being in excess of the silicate, and the silicate in excess of the fluoride of calcium. This mixture is fritted at proper heat, and the frit is treated with water to dissolve the soluble contents.

Claim.—First, the mode of producing or liberating potash or soda or both, as the case may be, from natural alkaliferous silicates, substantially as herein before described.

Second, the employment of fluoride of calcium in conjunction with earthy material, or mixture of earthy material, to act with the aid of heat on natural alkaliferous silicates, so as to produce or liberate therefrom potash or soda, or both, as the case may be, substantially as herein before described.

Third, the extraction by water of the soluble alkaline contents of calcined produce or frit, obtained when liberating alkali from alkaliferous silicates, and distinguished by the double character that it contains both alkaline matter and fluorine.

Fourth, the application of insoluble residuum, obtained when liberating alkali from alkaliferous silicates, and characterized by its containing as one of its ingredients fluorine, in the manufacture of manure, of hydraulic current, or of puzzolana, at the operator's choice, substantially as herein before described.

No. 46,980.—JOHN P. ALLEN, Richmond, Ind.—*School Desk and Seat.*—March 28, 1865.—This invention consists in the construction of two or more double school desks and seats, by means of an iron frame or leg at each end, also a support for the shelf and desk.

Claim.—In the construction of school furniture, the piece A, so constructed as to constitute a leg or support for the seat E, and also a support, as well as a means of attachment, for the bookshelf or bottom *g* of the book box, substantially as set forth.

No. 46,981.—EDWARD H. ASHCROFT, Lynn, Mass.—*Ratchet Drill.*—March 28, 1865.—This invention consists of a combination in a ratchet drill of a stock made of one solid piece, the upper part of which is hollow, and which forms a female screw to receive the male screw formed on the lower end of the feed mandrel, and of a cap or nut through which the said feed mandrel passes, screwed on top of the stock, which cap serves as a stuffing box and guide to said mandrel.

Claim.—A ratchet drill having a removable extending screw, which works, when the tool is in use, in an opposite direction to the drill, making the drill in one piece between the movable cap and the drill socket.

No. 46,982.—GEORGE ASMUS, Houghton, Mich.—*Writing Tablet.*—March 28, 1865.—This invention consists of a tablet with a roll of paper at one end and a slotted holder at the other, through which the paper is passed and torn off as it is used.

Claim.—A combined writing tablet, ruler and paper cutter, constructed as described, as a new article of manufacture.

No. 46,983.—G. W. BAKER, New York, N. Y.—*Treating Ores.*—March 28, 1865.—The object of this invention is to collect copper and other metals, or the salts of such metals,

from roasted pyritous ores. The heat required may be the waste heat from the roasting process. A shaft conveys the vapors and gases, composed of sulphurous acid, carbonic acid, and other products, from the roasting furnace; on the top of said shaft are placed leaden tanks containing roasted ore. In another tank are placed cobble stones, over which water is made to trickle from a pipe; the water in its descent dissolves the fumes of sulphurous acid from a flue, and the process is repeated until the water in the tank is sufficiently saturated, when the acid solution is poured over the roasted ore in tanks, and will, aided by the heat from the flue, dissolve out oxide of copper, iron, &c. The copper may then be recovered or saved in any of the usual modes.

Claim.—First, the utilization of waste heat and vapors created in the treatment of pyrites containing the precious metals, in the manner substantially as and for the purposes set forth.

Second, the forming of sulphurous acid, substantially as described, for the purpose of treating the calcined ores, whether containing only the baser metals, or the baser metals with gold and silver.

Third, the use of sulphurous acid, thus formed, in treating the calcined ores, for the purpose of converting the insoluble oxides into soluble sulphates, especially copper, as described.

Fourth, the method of obtaining a highly concentrated solution of the baser metals by lixiviating with the acid and submitting the weaker solution, obtained by lixiviating with water, to the acidulating process, as set forth.

No. 46,984.—G. W. BAKER, New York, N. Y.—*Roasting and Desulphurizing Ores.*—March 28, 1865.—This invention consists in roasting ore in an oven or furnace in which the ore and heated gases enter at the top and leave at the lower part. The fireplace is separated from the oven or retort, and one fireplace may serve several retorts. Over the fireplace is a steam boiler, the steam from which enters with the products of combustion to effect the roasting. The apparatus consists of a fireplace, steam boiler, and retorts. The steam and hot gases enter at the top by flues, and leave near the bottom by orifices and a flue.

Claim.—First, a reverberating retort, constructed and operating substantially as herein described.

Second, the use of steam as a blast to carry forward the vapors evolved from the ore, and surround the latter with a constantly changing atmosphere.

Third, the blast-chamber A, boiler B, arranged relatively with the fire-chamber C, substantially as shown, when said parts, thus arranged, are used in connection with a hot air pipe K leading from the ash pit of the fire-chamber into the flue I, which forms a communication between fire-chamber C and one or more reverberating retorts H, for the purpose herein set forth.

Fourth, the coil D, in combination with the boiler B, hot air chamber E, flues *g*, and steam coil F, all arranged to operate substantially as and for the purpose specified.

Fifth, the annular passages L at the lower parts of the retorts, arranged as shown, to communicate with the smoke-stack to form reverberating retorts.

Sixth, the conical feeders M, arranged or applied to the retorts, substantially as and for the purpose herein set forth.

No. 46,985.—FRANKLIN BALL, Cleona, Iowa.—*Gate.*—March 28, 1865.—This invention consists in constructing the gate in such a manner that it will be balanced, or nearly so, on its hinges, open and close laterally like an ordinary hinged gate, and at the same time be capable of being opened by elevating or raising it vertically.

Claim.—A gate, constructed substantially as described, or in any equivalent way, so as to be capable of being opened and closed by raising or lowering it in a vertical plane, when said gate is hung so as to swing, and open and close laterally, substantially as described.

Also, the bar D pivoted to post B, grooved at its under side to receive the upper ends of the pickets *d*.

No. 46,986.—JONATHAN BALL, Elmira, N. Y.—*Mouth-piece for Cigars.*—March 28, 1865.—In this invention a wooden tip, with a cylindrical end and a conical front, is joined to the cigar by a piece of paper fitting into a shoulder upon the tip.

Claim.—The wooden mouth-piece herein described, constructed with a cylindrical end *b* and a conical front *c*, as specified.

No. 46,987.—THOMAS J. BARRON, Brooklyn, N. Y.—*Mode of Preparing Inflammable Liquids so as to Prevent Accidents.*—March 28, 1865.—This invention consists in making inflammable and explosive oils and liquids so as to prevent accidents, by mixing with them some coloring matter, as aniline for red, Prussian blue for blue, alkanet and the like, so that such liquids may not be used by mistake, instead of the heavier, more explosive liquids which these resemble, as usually prepared.

Claim.—Giving to explosive and inflammable oils and fluids, used for illuminating and other purposes, a bright, distinct color, to plainly distinguish them from other oils and fluids. substantially as and for the purposes set forth.

No. 46,988.—JULIUS BAUR, New York, N. Y.—*Process for Lining Barrels for Holding Oils, &c.*—March 28, 1865.—This invention consists in treating oil barrels and other vessels with a boiling solution of silicate of soda or potash. of a strength of from 13° to 15° Baumé. The barrel or other article may then be treated with a warm solution of sulphate of iron or similar metallic salt.

Claim.—First, the above described process, substantially as set forth, of lining or coating barrels and other articles designed to contain petroleum, benzine, oil, ground lead or paint, and other similar substances.

Second, the above described process, substantially as set forth, of lining or coating barrels and other articles designed to hold alcohol, wines, whiskey, and other substances which contain water.

Third, the above described process of lining or coating barrels or other receptacle designed to contain any of the herein before referred to articles, when the soluble glass employed in such process is dried thoroughly into the substance of the barrel or other receptacle. substantially as set forth.

Fourth, the employment of soluble glass, whether alone or in union with other matters, to impregnate, or, as it were, petrify, any article which is designed to be secured against leakage or evaporation.

No. 46,989.—JOHN BAVIER, Newark, N. J.—*Tobacco Smoke Purifier.*—March 28, 1865.—This invention consists of a bowl the centre of which is raised so as to almost touch the flat top plate; in the said top plate between the sides of the pipe and the upward projection in the bowl is a series of perforations; in the top of the upward projection is a small hole through which the smoke is drawn into the stem.

Claim.—A detached smoke purifier constructed substantially in the manner and for the purpose herein above specified.

No. 46,990.—JNO. B. BENTON, New York N. Y.—*Water Meter.*—March 28, 1865; antedated March 12, 1865.—In this invention the water being admitted at one side of a reservoir flows through a number of apertures of equal size in a transverse perpendicular plate, and thence descends through a pipe to a receptacle at the base, and outward through a pipe, the mouth of which opens downward; all except the flow through one of the above-named apertures, which enters a suitable tube, and thence falls into a meter intermediate between the top and bottom receptacles. This meter retains the water until it rises to the top of a siphon placed therein when the siphon empties the meter into the lower receptacle; within this meter a float-valve rises with the water and momentarily checks the flow into the meter. An arm ascending from the lever carrying the float touches any suitable projection of a registering index. In the lower receptacle is arranged a valve for the outflowing pipe. This valve is attached to the upper side of a rod, the other end of which is hinged to the opposite side of the receptacle. This arm is lifted to close the valve by means of a float on the end of a rod which ascends from this transverse rod; there being a case exterior to the apparatus thus far described, which exterior case constitutes an air chamber whenever the outflow at the base is interrupted, from any cause, and, as soon as the accumulating waters rise to this float, the outflow of water is wholly stopped, and attention to the needed repairs is thus at once demanded.

Claim.—Constructing a meter substantially as described to divide the entire flow of water in given proportions and measure only a portion of the water which passes through the machine.

Also, the employment, in combination with the measuring reservoir, of a siphon arranged to operate as specified and automatically discharge the contents of the reservoir, as set forth.

No. 46,991.—CHARLES H. BRIGHTLY, Philadelphia, Penn.—*Slide Valves.*—March 28, 1865.—This invention consists in the arrangement of the valve with reference to the raised valve seat, through the sides of which steam is admitted to, and exhausted from, the cylinder. The valve is constructed in two parts, screws being provided to adjust the parts, so that as the seat wears away the valve may be adjusted to the reduced size of the seat. The arrangement also includes a screw which is tapped into one side of the valve, and is made to extend through the exhaust port, and press against the opposite side of the valve, and prevent the pressure from causing undue friction.

Claim.—First, the arrangement of the port box D, box valve B B, and brace E, substantially as and for the purposes herein described.

Second, the arrangement of the port box D, box valve B B, screws *h h*, and screw-threaded brace E, substantially as herein described.

Third, the manner herein described of arranging the adjusting screws *h h*, with the valve B B, and port box D, for the purpose set forth.

No. 46,992.—HENRY A. CLUM, Rochester, N. Y.—*Balance.*—March 28, 1865.—This invention consists in the use of mercury by its progressive displacement, either alone or in combination with a spiral spring for the weighing of commodities.

Claim.—The use of a spiral spring in combination with the plunger and mercury in order to impart increased capacity to scales capable of determining light weights, substantially as herein set forth.

No. 46,993.—Samuel Colaham, Cleveland, Ohio.—*Machine for Cutting and Preparing Hay for Baling.*—March 28, 1865.—This invention relates to a method of cutting and compressing hay or straw and discharging the same from the machine ready for baling by one continuous operation. Below a hopper supported on a frame are arranged two cylinders, underneath which is a cutter-head, the shaft of which passes through heads in each end, and to these heads is attached a hoop or circular plate, which forms the cutter-head. Secured to the said head is also a blade or cutter extending beyond the periphery of the cutter-head. In the lower part of the machine is an endless apron, and at the side of the frame is a guide, to direct the pressed hay from the cylinders to the carrier.

Claim.—First, the cylinders F and F′, in combination with cutter-head H and blade J, when arranged as and for the purpose set forth.

Second, the carrier or apron P and guide H, in combination with the cutter-head and hopper, as and for the purpose set forth.

No. 46,994.—L. O. Colvin, Philadelphia, Penn.—*Cow Milker.*—March 28, 1865.—This invention consists in having a separate pump or exhauster for each teat, operated simultaneously by a single lever, and yet working independently of each other.

Claim.—The employment or use, in a device for milking cows, of a series of pumps, one for each teat of the cow, arranged in such a manner as to be operated simultaneously by a single lever, and still work independently of each other, substantially as and for the purpose herein set forth.

Also, providing the pump aforesaid with check valves provided with openings, in such a manner as to admit of the ready withdrawal of the teats from their tubes, and still cause the latter to hug or retain the former to a necessary degree, as described.

Also, the combination of the pumps, pump valves, milk receptacle, and discharge spout, all arranged to operate in the manner substantially as and for the purpose specified.

No. 46,995.—Cicero Comstock, Milwaukee, Wis.—*Rotary Spader.*—March 28, 1865.—In this invention steel spades are fastened firmly into horizontal bars, that are secured by lugs to the driving wheels. By the forward motion of the machine and the rotation of the main wheels, controlled in a measure by a stationary cam, the teeth with their bars are moved around with the wheels, entering the earth nearly vertically. A spring over the cam receives the bars as they fall back heavily after being lifted from the earth. Curved bars are so arranged that when a certain amount of pressure exists by reason of obstacles in the way of the spades, the bars with their teeth fold back and pass the obstacles.

Claim.—First, the curved tine or tooth, widest at the point, with notch on the concave side of the head to embrace the fork-bar and stirrup, or clamp, and sharpened at the point by being bevelled on the concave side, substantially as herein recited.

Second, securing the tooth or tine to the fork-bar by the stirrup or clamp and key, as herein recited.

Third, the combination of the fork-bar, clamp, key, and tine or tooth, having the notch, as and for the purpose herein set forth.

Fourth, securing by casting the lugs on the ends of the fork-bars, to which to hang the friction roller or wheels.

Fifth, casting the handles or cranks on the fork-bars, as and for the purposes described.

Sixth, such a location on the handles or cranks on the fork-bars, in reference to the main wheels, that when the main wheels are keyed in place shall secure the forks in position, as herein named.

Seventh, driving the keys which secure the main wheels to the axles towards the centre of the machine, so that the hubs of the cams bearing against the heads of the keys will prevent the keys from loosening or coming out.

Eighth, the arrangement of the collars and sockets set forth, for excluding the dirt from the interior of the cam hubs.

Ninth, alternating the tines, as and for the purposes set forth.

Tenth, the spring on or near the back part of the cam, for the purposes recited.

Eleventh, making that portion of the central part of the cam which governs the action of the forks in the ground a separate piece, so that the same may be replaced as herein stated.

Twelfth, the construction and arrangement of the links and levers for actuating the movable section of the cam, and permitting the same to be self-actuating, as herein described.

No. 46,996.—Rowland Cromelien, Washington, D. C.—*Saw.*—March 28, 1865.—This saw is intended for cutting standing timber, and consists of three narrow-toothed blades bolted together, but so as to be readily separated when the teeth require sharpening. The blades are each somewhat thinner upon the back edge than upon the cutting or toothed edge, and the three when screwed together are attached to the thick edge of a solid wedge-shaped backing blade.

Claim.—The arrangement and combination of three saw blades, with their teeth filed and arranged at any angle required, and fastened firmly to a wedge or V-shaped back, as herein described and for the purposes set forth.

No. 46,997.—JAMES M. CROMWELL, New York, N. Y.—*Dancing Toy.*—March 28, 1865.—This invention consists of an automaton figure suspended by fine wires and moved by clockwork, in such manner as to produce a dancing movement.

Claim.—First, the employment or use of the lever C, with arm D attached, in connection with one or more rods E, suspended to D, and figures F suspended to E, substantially as and for the purpose specified.

Second, the employment or use of a clock movement in combination with the figures, when the latter are operated from the former, in the manner substantially as set forth.

Third, the adjustable prongs or arms *i i*, in combination with the lever C, for the purpose of controlling or regulating the vibration of the latter, for the purpose specified.

No. 46,998.—S. M. DAVIES, Chicago, Ill.—*Engine Head Light* —March 28, 1865.—This invention consists in the employment of semi-cones and frustra of cones in locomotive headlight lamps, to prevent the swashing of the oil by the motion of the engine.

Claim.—First, the use and employment of the semi-cones D D D D, for the purpose and in the manner described.

Second, the use and the employment of the semi-frustra of cones H H H H, in the manner and for the purpose described.

Third, the combination of semi-cones D D D D with the semi-frustra of cones H H H H, in the manner and for the purpose described.

No. 46,999.—J. H. DOUGHTY, New York, N. Y.—*Clothes Dryer.*—March 28, 1865.—This invention consists in the combination of a bracket and radiating folding arms, arranged so that the arms are expanded or folded on a horizontal line.

Claim.—In combination with the bracket A, constructed as herein shown and described, the radial arms B B, pivoted within the said bracket, so as to be expanded or folded together in a horizontal line, as specified.

No. 47,000.—SAMUEL B. EDSON, Kokoma, Ind.—*Horse Collar.*—March 28, 1865.—The object of this invention is to facilitate the putting on and taking off a horse collar. It is first separated at its top part; above this is arranged a locking clasp, which cannot be unloosened unless the left-hand point underneath is pressed downward, so as to permit the opposite one to be pushed sideways between it and the clasp. This permits the unloosing of the clasp.

Claim.—As an article of manufacture, the horse collar A, in combination with the locking clasp *c d*, the whole constructed and operated substantially as describad.

No. 47,001.—DANIEL R. ERDMANN, Philadelphia, Penn.—*Boring Drill.*—March 28, 1865.—This invention consists of a drill having projections arranged in respect to the cutting edge so that the drill may be always maintained in a central position in the bore of the well, and cannot be jammed therein.

Claim.—The within described drill, having projections *d d* arranged in respect to the cutting edge of the said drill, as and for the purpose set forth.

No. 47,002.—RANSOM FARR, Chesterfield, N. H.—*Connection for Water Pipes.*—March 28, 1865.—In this invention the pipe is formed by bringing together two grooved surfaces and thus forming a channel of the capacity of the grooves; the ends of such united pieces are taperingly narrowed, and thus when driven into a socket of corresponding form, a lateral band is made, the socket flaring in two directions, whether continuously or at angles; another section of pipe is clamped together in like manner, while the two pipes thus formed are at the same time united in the same socket.

Claim.—Connecting the sections of a water pipe together with a single connecting piece or casting laterally as well as longitudinally, substantially as described.

No. 46,003.—ALFRED FELLOWS, Maquoketa, Iowa.—*Propulsion of Steamboat.*—March 28, 1865.—This invention consists of a central water way in which the propeller runs by means of an endless chain applied to the fore part of the boat. The boat is steered by a plurality of rudders, centrally upon their shafts, within or opposite the water way.

Claim.—First, the application of endless propelling chains to the fore part of a boat constructed with a central water way, substantially as and for the purpose herein set forth.

Second, in combination with a boat of the construction specified, a plurality of rudders hung centrally upon their shafts and mounted within or opposite to the water way, substantially as and for the purposes set forth.

No. 47,004.—CHARLES L. FISHER, Chelsea, Mass.—*Connection of the Gaff to the Mast of Navigable Vessels.*—March 28, 1865.—In this invention the pressure of the gaff is on each side of the ring or strap, whereby the said ring or strap is more readily moved up or down on the mast, the pressure at the sides slacking the ring or strap forward on the mast.

Claim.—Improved mode of attaching a gaff to the mast of a vessel, the same being substantially in manner and so as to operate as and for the purposes set forth.

No. 47,005.—Lemuel S. Fithian, Rahway, N. J.—*Traction Wheels for Rotary Ploughs.*—March 28, 1865.—This invention consists in increasing the traction or adhesive power of a wheel for propelling carriages, without materially augmenting its weight, and at the same time to prevent the circumference of the wheel from sinking so deeply into the ground as to diminish its propelling force.

Claim.—First, a traction wheel or drum which is provided with bevelled slats or bars extending obliquely across it, and operating substantially as described.

Second, securing the slats of a ground propeller to the radial spokes of three or more wheels, which are constructed and braced substantially as described.

Third, the employment of metal face plates *e e* in combination with the bevelled and obliquely arranged slats *g*, substantially as described.

No. 47,006.—Edward Fitzki, Philadelphia, Penn.—*Ice Sandal.*—March 28, 1865.—This invention consists of an ice sandal made in two parts, which are connected by a slotted plate and spring bar in such a manner that it can be lengthened in order to attach it to a boot or shoe, and that it will be kept in place by a small cap in front and a heel pin behind.

Claim.—First, an ice sandal made of two parts connected together by a slotted plate and springs, substantially as and for the purpose described.

Second, the revolving longitudinally adjustable rods *f f'*, with points *g*, in combination with the sandal A, constructed and operating substantially as and for the purpose set forth.

Third, making the creeper rods *f f'* adjustable by means of buttons *i i*, or their equivalents, substantially as and for the purpose specified.

Fourth, the cam *m*, in combination with the creeper rods *f f'* and sandal A, constructed and operating substantially as and for the purpose set forth.

No. 47,007.—Frederic G. Ford, Washington, D. C.—*Caster for Furniture.*—March 28, 1865.—This invention consists of a socket driven into the leg of the furniture. The socket has a female screw formed in it and a circular recess on the flange; the caster wheel is connected by a screw that acts as a pivot and enters the socket; the head or swivel of the caster has a projecting ring that enters the circular recess and keeps the parts in place.

Claim.—The socket or tube B, with its circular recess *a a* in the disk, and its corresponding projecting ring *c c*, on the swivel C, in combination with the fastening screw D, which forms the pivot, for the purposes herein set forth.

No. 47,008.—Joseph Fowler and F. M. Bacon, Watertown, Wis.—*Hanging Cultivator Teeth.*—March 28, 1865.—This invention consists in retaining the cultivator tooth by friction against a quadrant bearing, so that the tooth can be in a vertical or in an inclined position and will yield to obstacles without injury to the tooth. The pin holding the upper end of the tooth acts as a wedge, confining it sufficiently for passing through the soil.

Claim.—Retaining the cultivator tooth by friction against a quadrant bearing substantially as specified, so that the said tooth can be in a vertical or in an inclined position and will yield to obstacles without injury to the tooth, as specified.

No. 47,009.—Joseph Fowler and F. M. Bacon, Watertown, Wis.—*Seeding Machine.*—March 28, 1865.—This invention consists in a peculiar device for increasing or diminishing the size of the seed cells, which is done by means of two bars worked simultaneously by a lever. The bars to which blocks are secured are moved in opposite directions at the same time, thus opening and closing the cells.

Claim.—The slide *g*, moving in the supports *h*, in combination with the blocks 2 and 3, bars 4 and 5, and lever *i*, to regulate the size of the seed cells, in the manner and for the purposes set forth.

No. 47,010.—B. D. Godfrey, Milford, Mass.—*Boots and Shoes.*—March 28, 1865.—This invention is a boot or shoe in which the welt, or that part of the sole which makes the layer next to the vamp, is so cut and applied that it constitutes a guard or fender for the vamp all around the front part of the boot or shoe.

Claim.—A boot or shoe having a construction substantially as herein described.

No. 47,011.—W. R. Greenleaf, Buffalo, N. Y.—*Oil Ejector.*—March 28, 1865.—This invention consists in the application of a shield to the induction or oil receiving pipe of an oil ejector, by which the gas confined or held in the oil is separated therefrom, and prevented from entering said induction pipe through the action of the excess of the specific gravity of the liquid over that of the gas.

Claim.—The application and use of the conical cup or vessel B, or its equivalent device, to the induction pipe or opening of a pump, ejector, or other instruments for raising liquids from wells or reservoirs, by which a perfect separation is effected of any gas which the well may contain from the liquid being raised and the gas thus prevented from entering said pump or ejectors, substantially as set forth.

No. 47,012.—Conrad Hagen and Frank Aurnkammer, New York, N. Y.—*Hydrogen Lamp.*—March 28, 1865.—This invention consists of a glass jar upon which is secured a top

provided with a screw cap; from the centre of this cap rises a case provided with a plug to which is attached an arm. The thick end of the plug opposite the platinum sponge is pierced with an angular channel, so arranged that when the arm is depressed it communicates with the channel in the cap and allows the gas to escape. The arm has attached to it a rod with a piece of zinc on one end, and the rod operates in such a manner that when the arm is depressed the zinc is lowered into the acid and water.

Claim.—The application of the arm *b* in combination with the plug E, block of zinc H, lever G, and spring plug *f*, all constructed and operating substantially as and for the purpose herein shown and described.

Also, making the sponge adjustable toward and from the discharging end of the plug, as set forth.

No. 47,013.—HENRY HAINES, Farley, Iowa.—*Machine for Cutting Sheaf Bands.*—March 28, 1865.—In this invention an endless belt of hooked knives revolves at right angles to the endless belt forming the straw carrier. As the sheaf passes along its carrier, these hooked knives pass through it and cut the bands.

Claim.—The endless carrier in combination with the endless belt of knives, said parts being placed within a suitable frame connected with the threshing machine, all arranged to operate in the manner substantially as and for the purpose herein set forth.

No. 47,014.—ADOLPH HAMMER, New York, N. Y.—*Process for Brewing.*—March 28, 1865.—This invention consists in forming one or more heating chambers in a mash tun by means of perforated diaphragms; the heat being conveyed to the heating chamber by means of an oblique pipe. The malt is contained in a chamber below.

Claim.—First, heating the mash in brewers' tuns by means of one or more chambers arranged above the chamber containing the mash, substantially as described, when the heated current or fluid passes down into the mash and heats the same gradually to the desired temperature, while the said malt is compelled to float.

Second, the oblique pipe or pipes E, applied in combination with the heating chamber D, substanially as and for the purpose described.

No. 47,015.—JOHN W. HARD, Decorah, Iowa.—*Car Axles.*—March 28, 1865.—This invention consists in the arrangement of a mulley ratchet in the interior of the coupling to operate in combination with two spring dogs, one in each of the inner ends of the two half axles, so that when the wheels are moving in a rectilinear portion of the track, both half axles revolve simultaneously like a solid axle; but if the wheels move on a curve, the inner wheel lags sufficiently to prevent undue injury to the track. An annular reservoir is arranged in the coupling, communicating by radiating channels with the inner ends of the half axles, and by a suitable hole in the exterior of the coupling, so that a sufficiency of oil can always be introduced.

Claim.—First, the spring dogs *b b'*, and scolloped recesses *a a'*, in combination with the half axles A A', and half couplings C C', constructed and operating substantially as and for the purpose set forth.

Second, the annular oil reservoir *d* and radiating chambers *e*, in combination with the half axles and couplings, constructed and operating substantially as and for the purpose described.

Third, the circular grooves *h h'* near the outer ends of the half couplings, applied and operating substantially as and for the purpose specified.

Fourth, the wings *i* projecting from the peripheries of the half couplings, substantially as and for the purpose set forth.

No. 47,016.—JOHN HARPER, Salem, Iowa.—*Corn Cultivator.*—March 28, 1865.—This machine is composed of a frame hinged upon the tongue so as to be easily lifted by means of a lever working under a cross-bar. To the front end of the lever is attached a rope which extends under the tongue to the driver's seat, by means of which the four ploughs can readily be raised vertically at pleasure. The frame can also be adjusted upon segmental guide rods from one hole to another.

Claim.—First, the frame F F, adjustable on the segmental guide rods C C, as specified.

Second, the manner in which the front shovels are attached to the bar B, turning them to or from the corn as may be required, in combination with the lever L, substantially as and for the purposes set forth.

No. 47,017.—JOHN HARPER, Hillsborough, Iowa.—*Cultivator.*—March 28, 1865.—In this machine there is an arrangement of old devices for the purpose of producing a convenient implement, the ploughs being operated laterally by the feet of the driver.

Claim.—The slotted shovel standards P, in combination with the lever L, rope O S, and stirrup V, the several parts being constructed, arranged, and operating as and for the purpose set forth.

No. 47,018.—WM. HAWKINS, Birmingham, Conn.—*Skate.*—March 28, 1865.—This invention consists in so constructing and arranging together the sliding heel-clamp and the

skate stock, that the slide shall be held down in its bearings by the stock of the skate instead of being retained in its proper horizontal position by the screw rod, as heretofore.

Claim.—So constructing a skate that the sliding heel-clamp shall be held or retained vertically within the seat or bearing formed for it in the stock independently of the set screw, as and for the purpose substantially set forth.

No. 47,019.—JOHN HENRY HILDEBRANDT, Brooklyn, N. Y.—*Wood-splitting Machine.*—March 28, 1865.—This invention consists in providing in a wood-splitting machine a conductor so made that the bottom inclines enough to allow the blocks of wood to pass to the knife by their own gravity; the knife works horizontally by means of a crank and pitman, and the blocks of wood are prevented from sliding down below the knife by reason of the split wood below being held in place and fed out, by a device that is operated by a cam on the main shaft giving motion to a pitman that is attached to levers and shafts upon which are pinions that separate the feeders.

Claim.—First, the combination of the conductor G through which the blocks descend by their own gravity, and the inclined plane knife F, constructed and arranged to operate as specified.

Second, the feeder H constructed substantially as herein specified, and operating in combination with the conductor G and knife F, in the manner and for the purpose described.

No. 47,020.—D. H. ISEMINGER, Heyworth, Ill.—*Sorghum Evaporator.*—March 28, 1865.—This invention relates to a device for evaporating sorghum, and it consists in a means employed for treating the juice preparatory to its entering the evaporating pan for the purpose of economizing in time.

Claim.—First, the combining of the register G with the pipe L and furnace C, all arranged substantially as and for the purposes set forth.

Second, in combination with the furnace C and pan H, the longitudinally-divided pan J, divided flues B B and dampers D D, all arranged and operated as described.

No. 47,021.—Cancelled.

No. 47,022.—G. W. JENNINGS, Boston, Mass.—*Hand Mowing Machine.*—March 28, 1865.—This invention relates to the arrangement of mechanism for operating the cutters in a hand mowing machine, and will be understood by reference to the claim and engraving.

Claim.—The internal teeth *d*, of the wheel B, the pinion D, and bevel gears E, F, G, in connection with the crank-pin *g*, of shaft H, and the slotted lug *i* on the sickle bar L, all arranged to operate in the manner substantially as and for the purpose set forth.

Also the caps C C, on or over the wheels B B, with the finger bar M and handles D attached thereto, substantially as described.

No. 47,023.—ALBERT D. JUDD, New Haven, Conn.—*Attaching Ornamental Heads to Picture Nails.*—March 28, 1865.—This invention consists in making a collar upon the nail a short distance from the end to which the head is to be attached and about midway between the collar and said end, two lugs. An oblong opening is made in the ornamental head to admit the end of the nail and the lugs. The surfaces of the inside of the head are inclined like the threads of a screw, so that after the nail is driven into its place, by slipping the ornamental head upon it, over the lugs, and turning it, it is screwed up and held tight between the collar and the lugs, and may be taken off and the nail drawn out again.

Claim.—Attaching the ornamental head to a picture nail or other article, by means of the disk *d*, collar *b*, and lug or lugs *c*, as specified.

No. 27,024.—GIDEON KING, Eminence, Ky.—*Wheat Drill.*—March 28, 1865.—This invention consists in attaching a drill to a common plough. The drill is so constructed that a row or drill of grain is deposited simultaneously with every furrow ploughed.

Claim.—First, the drill-board E, in combination with the plough, as specified.

Second, the feed frame O, in combination with the drill-board E, as and for the purpose set forth

Third, the shaft *q*, for connecting the drill-board E to the plough beam, as and for the purpose described.

Fourth, attaching the drill-board E to the forward end of the plough beam by means of the propelling rods A and *e* and staple *c*, as and for the purpose specified.

Fifth, the feed nut V, in combination with the drill-board E and wheel I, when constructed as and for the purpose set forth.

Sixth, the adjustable wedge in the heel of the drill-board E, and in combination therewith, as and for the purpose specified.

Seventh, the adjustment of the wheel I upon the shaft J, in combination with the drill-board E, as and for the purpose described.

Eighth, the stopper Y and temper screw X′, in combination with the feed nut V, as specified.

Ninth, attaching the drill-board E to the heel of the plough by means of the curved rod K, as and for the purposes set forth.

Tenth, the adjustable plate S at the rear end of the drill-board E, for the purpose described.

Eleventh, depositing the seed between the last furrow ploughed and the furrow being ploughed, as herein specified, by means of the drill-board E.

No. 47,025.—WERNER KROEGER, Milwaukee, Wis.—*Vessel for Boiling.*—March 28, 1865.—This invention consists in applying a band or casing of copper to that part of tin boilers, coffee pots, &c., which is exposed to the fire.

Claim.—The copper band B, applied in the manner described to tin vessels used for heating or boiling, for the purpose explained.

No. 47,026.—BENJAMIN P. LAMASON and SIDNEY D. KING, Alexandria, Va.—*Signal Tower.*—March 28, 1865.—This invention consists in an arrangement of vertical screws for elevating and depressing the signal tower, for which letters patent were granted in 1864. The said vertical screws work in nuts placed in cross-bars connecting the opposite and parallel system of levers which compose said tower, so that as the said cross-bars are forced upward or downward by the action of the vertical screw, the system of "lazy tongs" are opened or closed, and the tower thus raised or lowered.

Claim.—First, the short arms N N, the bolster I, when constructed and used in the manner and for the purpose herein described.

Second, in combination with the above, and with the vertical iron screws C C C C, the spur wheels D D D D, pinion wheel E, vertical shaft F, and bevel gear wheels H H, arranged and operating substantially as and for the purpose herein specified.

No. 47,027.—ADAM W. LOUTH, Philadelphia, Penn.—*Apparatus for Treating Offal, &c.*—March 28, 1865.—This invention consists of an oblong building with a flat roof, from one side of which an inclined plane extends to the ground. At one side of the building is a smaller building, at one end of which is an oven heated by means of a fireplace, the communication between the oven and the building being effected by means of doors. The opposite end of smaller building is closed by doors. At the end of the larger building near the oven are two flues, the former having a fireplace at its lower end and communicating with an opening in the smaller building and with the oven. Through the top of the smaller building projects the lower ends of two boilers, each boiler being provided with stirrers. In the lower part of the boiler is a tube, closed by a throttle valve, the lower end of the tube being closed by a movable gate. The bottom of the boiler is also closed by a gate

Claim.—First, one or more boilers, H and H′, with their gates or doors, in combination with the building B, oven D, chimney G, and its fireplace, the whole being arranged substantially as described, so that the fumes generated by the treatment of the offal shall, before escaping to the air, be thoroughly burned and disinfected.

Second, the closed building B, with its trucks M and N, in combination with one or more boilers, H and H′, and the oven D.

Third, the boilers H, combined with the reservoir J and the steam-pipes *f f′* and *g*, or their equivalents, arranged substantially as set forth, so that the fat rising to the surface of the water in the boiler shall be discharged into the reservoir.

Fourth, the tank K, with the discharge pipe *i*, arranged in respect to the building B and boiler H substantially as specified.

Fifth, the truck N, with its tilting frame *o* and trays *q*, constructed and operating substantially as and for the purpose set forth.

No. 47,028.—ROBERT MCMURRAY and JAMES S. TOPHAM, Washington, D. C.—*Saddle Valise.*—March 28, 1865.—This invention consists in a cylindrical valise to fit close behind the saddle, made without any seams exposed to rain, and riveted together so as to dispense with stitching. It is also provided with springs to keep it in proper shape, and a moulded cover to exclude the rain.

Claim.—The springs F, in combination with a cylindrical saddle valise, constructed and arranged substantially as described.

No. 47,029.—IVES W. MCGAFFEY, Chicago, Ill.—*Combined Planter and Cultivator.*—March 28, 1865.—This invention consists in the arrangement of certain devices for dropping corn and other seeds, combined and operated in connection with a cultivator, having its teeth and standards adjustable so that they can be set at a proper angle for opening a furrow or for covering the seed when used for planting, and readjusted to any desired position for cultivating.

Claim.—First, the slotted braces C *c*, in combination with the beam A and handles B, for the purpose of adjusting the latter, as set forth.

Second, the reversible bevelled blocks K, J, and G, when arranged to operate in combination with the beam A and plough standard, for the purpose of adjusting the latter, as described.

Third, the hinged division plate X, arranged to operate in connection with the seed hopper, as and for the purpose set forth.

Fourth, the adjustable spring P, in combination with the seed plate L, when constructed and arranged to operate substantially as herein described.

Fifth, the combination of rod I, plate and spring P, arranged to operate as and for the purpose set forth.

No. 47,030.—GEORGE MILSOM, HENRY SPENDELOW, and G. V. WATSON, Buffalo, N. Y.—*Apparatus for Leveling Grain in a Vessel's Hold.*—March 28, 1865.—This invention consists of a series of shovels, attached to an extensible bar or rod, in the means of attaching to the rod its operating rope or chain, and in leading the rope to a windlass so placed that a stevedore in the hold, who has the surface of the grain under his inspection, may suspend or direct the action of the shovels, as the inequalities of the surface of the grain may require.

Claim.—First, connecting a number of scoops or shovels, A, together by an inflexible extensible rod or stretchers, C, for the purposes and substantially as described.

Second, connecting the rope or chains C′, by which motion is given to the scoops or shovels, A, to the connecting rod or stretcher C, at points between the end scoops or shovels, substantially as and for the purposes set forth.

Third, a reversible scoop or shovel, Fig. VIII, constructed and operating on the rod as and for the purposes set forth.

Fourth, a double-acting scoop or shovel, Fig. XI, constructed and operating on the rod, as and for the purposes set forth.

Fifth, the combination of the windlass barrels F and changing levers I, so located and connected that a person or persons stationed in the hold of a vessel where the grain is, and having full view of the moving scoops or shovels, shall also have control of said windlass, barrels, and shovels, to regulate and control the movements thereof, substantially as set forth.

No. 47,031.—JOHN ROBERT MOORE, Brooklyn, N. Y.—*Coupling Tool for Drilling.*—March 28, 1865.—This invention consists in screwing the reduced end of a shaft into the enlarged end of another shaft, the former having a collar upon it just back of a screw, and the outer surface of the latter having a thread cut upon it. A sleeve surrounds the two ends thus screwed together, and is screwed upon the external screw of the latter shaft until an internal flange at the opposite end is forced up against the collar on the former.

Claim.—The improved mode of coupling, substantially as described.

No. 47,032.—WM. MOREHOUSE, Buffalo, N. Y.—*Buck-saw Frame.*—March 28, 1865.—This invention consists in a bow-shaped frame with metal clips at the centre of the top of the frame, through which passes a screw rod, and on the top of the frame is a nut working on the screw rod, the other end of which is firmly fastened to the cross or strain-bar, so that by turning the thumb-nut down upon the frame, it causes the bar to be drawn up on the frame and the saw to be strained.

Claim.—First, the combination of the parts A B, clips *d d*, screw-rod F, and screw nuts *g*, or their equivalents, substantially as described.

Second, a sliding bar, D, for effecting the straining of the saw-blade of a buck-saw, substantially as described.

No. 47,033.—JOHN L. NICOLAI, Chicago, Ill.—*Automatic Track Layer.*—March 28, 1865; antedated March 10, 1865.—This invention consists in making a road of planks arranged at right angles with the direction of the road, upon which a track is laid in sections, so that each plank, with the section of track thereon, may be readily taken up from the rear of the vehicle and deposited in front thereof, thus forming a continuous track laid upon a plank road for aid vehicle to pass over, by using only planks enough to form a track of the length of the vehicle.

Claim.—First, the endless belts G, provided with hooks or their equivalents, in combination with a vehicle to be used upon a track, constructed substantially as described, and operating substantially as and for the purposes described.

Second, in combination with the above, the elastic arms *b*, *d*, and *e*, or their equivalent, operating as herein set forth.

Third, the combination and arrangement of the endless belts G, the wheels F and E, with the drums C D and truck-wheels A, operating in the manner shown and described.

Fourth, providing the wheels F with the pins *f*, when used in combination with the planks L, provided with the pins *r*, or the hinged pins *p*, arranged and operating as and for the purposes shown and specified.

Fifth, the arrangement of the springs *m* with the pins *r r*, the flanks operating as and for the purposes herein described.

Sixth, the combination of the belts G, provided with hooks, as aforesaid, with the planks D, provided with the pins *l*, all arranged and operating as and for the purposes specified.

Seventh, the combination and arrangement of the wedge-shaped point *e* with the depression *n* and pins *o o*, as and for the purposes set forth.

Eighth, the manner of constructing a truck herein shown, whereby the same is made removable by sections, as and for the purposes shown.

Ninth, taking up said sections of the track from the rear of the machine and depositing them in front thereof, by an automatic mechanism attached to a vehicle moving over said track, substantially as herein shown and set forth.

No. 47,034.—F. S. PEASE, Buffalo, N. Y.—*Oil Ejector.*—March 28, 1865.—This invention consists in the arrangement of an air pump with an air receiver and an exhausted receiver, in connection with a pipe leading to a chamber in the bottom of an oil well, by

which means the chamber is caused to be filled and emptied alternately by the same body of air, which is forced into it by the pressure of the air in the reservoir for that purpose, and is withdrawn again by the exhausted receiver through the action of the air pump, thus using the same body of air over and over, and causing the oil to be ejected by its pulsative action.

Claim.—First, raising oil or other liquids from wells and other deep places by intermittent pulsative action, or repeated vibration of a confined body of air or other fluid, substantially as herein set forth.

Second, the arrangement, substantially as herein shown and described, of a double acting air pump, and a compressed air chamber, and an exhausted receiver, in combination with an air conducting pipe *e*, communicating with a well tube.

Third, the arrangement of the valve chamber A′, at or near the bottom of a well tube, either within the same or connected therewith, with an upper and lower valve, each opening upward, the upper valve communicating with the chamber A′ by means of a tube *m*, substantially as described.

Fourth, the valves *g n* of the valve chamber A′, operated by means of the vibrations of a column of air, alternately filling the chamber with air and exhausting the same, for the purpose of raising oil and other liquids from deep wells, substantially as described.

No. 47,035.—Ebenezer Penfield, Oberlin, Ohio.—*Medical Compound.*—March 28, 1865.—This invention consists in extracting the resinous and gummy substances from flax by steeping it in water, in a large vat, for two or three days, heating the water for part of the time. The flax is then removed and the extract is boiled down to the proper consistency, and the product obtained is used as a medicine for various diseases.

Claim.—The use for medical purposes of an extract of flax, prepared substantially in the manner herein set forth.

No. 47,036.—S. B. Phelps and C. A. Slack, Norwich, Vt.—*Hoisting Machine.*—March 28, 1865.—This invention consists in having a crank attached to screw shafts, and by revolving it for awhile in one direction and next turning it for a similar period in an opposite direction, there will be produced, by means of the screws, the levers, pawls, and ratchets, a continuous rotation of the windlass in one direction.

Claim.—The combination of the windlass A′, the ratchets D D′, pawls E E′, the levers C C′, the sliders F F′, the screws G G′, the screw boxes H H′, or their equivalents, and the gears for connecting the shaft, the whole being arranged and applied to the frame B and its projections O O′, and so as to operate together, substantially as specified.

Also, the combination of the two pawl trippers R R′, or their mechanical equivalents, with the said windlass, its ratchets, pawls, levers, sliders, screws, and the connecting gears thereof, the whole being arranged in manner and so as to operate substantially as set forth.

No. 47,037.—John W. Phillips, Randolph Center, Wis.—*Wool Presses.*—March 28, 1865.—This invention consists in a device for firmly packing fleeces of wool by means of a box capable of being folded out flat, in which condition the wool is placed upon it. The several parts are then folded together, forming a box in which the wool is compressed.

Claim.—First, the combination and arrangement of the side pieces A, provided with the hooks X and springs S, the centre piece C, and the end pieces B, provided with the strips *b*, when constructed and operating substantially as and for the purpose specified and set forth.

Second, the combination and arrangement of the side pieces A, provided with the hooks X and springs S, the centre piece C, and the end pieces B, when constructed and operating substantially as described.

No. 47,038.—S. Safford Putnam, Dorchester, Mass.—*Washing Machine.*—March 28, 1865.—This invention consists of a revolving box, with a number of slots arranged to form a continuous rubbing surface and a chamber between them and the sides of the box, into which the water passes as the box is revolved.

Claim.—The receptacle A, with its slats *d* so arranged as to form a continuous rubbing surface and a chamber F, substantially as set forth for the purpose specified.

No. 47,039.—Lewis Reese, Rolling Prairie, Ind.—*Wind Wheel.*—March 28, 1865.—The object of this invention is to so combine the parts that a uniform motion of the wind wheel shall be maintained, irrespective of the fluctuation of the wind's force. Its novelty consists in the combination and arrangement of the radial arms, friction blocks, friction plate upon the wind wheel, the swinging lever, weight, and shaft of the wind wheel.

Claim.—The combination and arrangement of the radial arms H H and the friction blocks K K, so as to operate in conjunction with a friction ring or plate G upon the wind wheel A, substantially in the manner and for the purpose herein set forth.

Also, the combination of a swinging lever O and attached cord and weight P, with the rear end of the sliding shaft B of the wind wheel A, when arranged substantially in the manner and for the purpose herein set forth.

No. 47,040.—William B. Richards, New York, N. Y.—*Method of Preventing the Corrosion or Staining of the Surface of Glass.*—March 28, 1865.—This invention consists in

applying calcined plaster to the surface of the glass before packing. The plaster may be used in the form of powder or applied as a paste in a thin coating of the glass.

Claim.—The mode herein specified of protecting the surface of glass, after it has been manufactured, from corrosion and staining, as set forth.

No. 47,041.—JOHN A. ROBINSON, Pittston, Penn.—*Coal Screen.*—March 28, 1865.—This invention consists of a square or oblong frame in which are set two screens, one above the other, at about an angle of forty-five degrees. The upper screen is made with every alternate bar capable of a lateral motion. By these means the distance between the bars is made less or greater at pleasure, and the coal is sifted more or less fine in consequence. The bars of the lower screen on which the coal falls, after being sifted by the top ones, are immovable, and much closer together than those of the upper screen.

Claim.—The employment or use of screens A B, arranged substantially as shown and described, for the purpose of screening coal in its discharge to the cracker and grading screen, as set forth.

Also, constructing the upper screen A with movable or adjustable bars, arranged to operate substantially as herein described.

No. 47,042.—WILLIAM F. RUNDELL, Genoa, N. Y.—*Hay Fork.*—March 28, 1865.—This invention consists in an arrangement of devices for attaching the fork to the handle, and will be readily understood from the claim and engraving.

Claim.—The ferule D fitted on the handle C and provided with an end *a*, which projects beyond the end of the handle, and has a square hole *b* made in it, in connection with the key or wedge E and screw on the tang B of the fork, all arranged substantially as and for the purpose specified.

No. 47,043.—CYRUS W. SALADEE, Putnam, Ohio.—*Machine for Making Earthenware.*—March 28, 1865.—This invention consists chiefly in forming earthenware by forcing the clay through a crevice in a revolving hollow plunger, so as to form the vessel in the space between the exterior of the plunger and the enclosing mould.

Claim.—First, constructing a machine in the manner described, or its equivalent, so as to form earthenware without the necessity of weighing or measuring the clay.

Second, the hollow forming plunger B, or its equivalent, constructed and operating in the manner and for the purpose described.

Third, the feeding cylinder A, or its equivalent, constructed and operating in the manner and for the purposes described.

Fourth, the moulds C when constructed and operating so as to open in halves vertically, as described.

Fifth, the vent pin Q, or its equivalent, constructed and operating as described.

Sixth, the mould table D, or its equivalent, constructed and operating as described.

Seventh, attaching the lining Z to the lap edges of the mould when the lining is composed of woollen or other non-elastic fabric, and closely conforms to the shape of the mould, in the manner and for the purposes specified.

Eighth. the mode described, or its equivalent, of producing letters or designs upon the earthenware.

No. 47,044.—A. SELOVER, Brooklyn, Ohio.—*Fruit Gatherer.*—March 28, 1865.—This device consists of a framework of wire secured to the end of a long pole or handle. The framework is constructed in the form of jaws, which are operated by a spring and cord, and the fruit is conducted into a basket by means of a flexible tube.

Claim.—A fruit gatherer constructed and operating as herein set forth.

No. 47,045.—CHARLES J. SHEPARD, Brooklyn, N. Y.—*Cooking Range.*—March 28, 1865.—In this invention, from the fire pot in the centre, the heat, &c., may pass nearly directly to the exit flues, or by closing the dampers under the top plates flanged under the inner sides, so as to make several passage ways and around the ovens to exit pipes, by opening dampers over the tops of the spaces between the ovens the drafts may flow, and also by the sides of the ovens; diaphragms in these spaces make double passages; the exit flues are on the back of the range, and so disposed as not to interfere with the oven space. In the top of range is a series of shallow ovens to hold cooked food, &c.; between them are spaces connected with the double plate top, whence a pipe leads to the chimney.

Claim.—First, the use or employment of flanched sectional top plates L, for the purpose specified.

Second, the flue division or diaphragm J, arranged as shown for the purpose set forth.

Third, the back flue H, operating substantially as described for the purpose set forth.

Fourth, the use or employment of the top ovens N, for the purpose specified.

Fifth, in combination with the flue division or diaphragm J the slide valve, for the purpose specified.

Sixth, the interior flue bricking K, at the outer ends of the range, for the purpose specified.

No. 47,046.—CORNELIUS H. SMITH, Rock Island, Ill.—*Placer Mining.*—March 28, 1865.—This invention consists in forcing water through pipes or hose by means of a steam engine or other power, so as to convey the water to the placer and throw it in a strong jet against the bank of earth, for the purpose of washing and tearing it up. When it is an object to save water, the stream which runs off from the placer is collected in a pond, and after settling is used over again as often as necessary.

Claim.—First, washing metalliferous earths and ores by currents of water forced by steam pumps or mechanical power and delivered in jets in contact with the earth or ores.

Second, forcing water by pumps or other mechanical means for washing earths and ores, under such a system of water pipes and return channels that the water is returned to its reservoir for repeated use, substantially as set forth.

No. 47,047.—ORLANDO SPARGUE, Fulton, Ill.—*Beehives.*—March 28, 1865.—This invention consists in the use of corncobs as a lining for the hive.

Claim.—The use of corncobs as a lining or covering for or in connection with beehives, substantially as and for the purpose set forth.

No. 47,048.—ARNOLD F. STEELE, Crossingville, Penn.—*Pole Propeller.*—March 28, 1865.—This propeller works by poles or rods against the bottom, in shallow water navigation. The invention consists in the combination of an eccentric wheel and bars, which operate the propelling rods.

Claim.—The levers K K H H, and the propellers S S W W, in combination with the eccentric wheel C, and the connecting rods E F, when the same are constructed in the aforesaid combination for the purposes set forth.

No. 47,049.—PHILO P. STEWART, Troy, N Y.—*Fire Pot for Stoves, Furnaces, &c.*—March 28, 1865.—This invention consists in the employment of horizontal sections or layers for fire pots of stoves, furnaces, &c.; said layers being made of cast iron, or any other desirable material, with horizontal air chambers between them, communicating with vertical air chambers, and thence with the fire chamber by means of small tubes, through which and by means of which atmospheric air is admitted to the fire, at the sides thereof and above the surface, to aid in the more perfect combustion of the fuel and gases.

Claim.—The employment of a fire pot, constructed, arranged and combined in the manner substantially as and for the purposes herein described and set forth.

No. 47,050.—THOMAS STOCKTON, North Chenango, Pa.—*Apparatus for raising Dough.*—March 28, 1865.—This invention consists of a water-tight, covered vessel, of tin or other suitable material, with a perforated shelf across the centre. The receptacles containing the dough are placed upon this perforated shelf, and then covered with a cloth to prevent the condensation of moisture upon the surface of the dough. Warm water is then poured into the lower part of the vessel, after which it is closed by means of a cover.

Claim.—The employment of a hot water holder A, in combination with the dough receptacles C, supported by rods B, above the level of the water, substantially in the manner and for the purpose herein shown and described.

No. 47,051.—ELI THAYER, Worcester, Mass.—*Automatic Steam Pump.*—March 28, 1865.—This invention consists in combining a coil of pipe, in which steam is generated, with a hollow cylinder or tube, in such a manner that the steam enters the cylinder, and being condensed therein, forms a vacuum into which water rushes through a valve in the induction pipe, and fills or nearly fills the cylinder, when steam is admitted above the water, and forces it out through the eduction valve and pipe to any desired location. The coil is supplied with water from the cylinder through a valve placed in the connecting pipe.

Claim.—The combination of the coil or heater K, including the globe valve H, and the check valve I, with the main tube A, and the other valves and pipes connected with it, for the purposes and in the manner above described.

No. 47,052.—ELI THAYER, Worcester, Mass.—*Grate Bars for Boilers.*—March 28, 1865.—The object of this invention is to cause the circulation of water through the grate bars of boilers of steam engines, and to be enabled to blow through them in sections, if desired, with the full pressure of the boilers, so as to cleanse the grate bars from any foreign substance not removed by the usual circulation. It consists in connecting the grate bars with the boiler through pipes, in combination with cocks.

Claim.—The hollow grate bars, connected with the boiler through the pipes *b b'* and *c c'*, and adapted to be cleansed by the aid of the cocks 1 2 3, arranged in the manner substantially as herein described.

No. 47,053.—ELI THAYER, Worcester, Mass.—*Steam Generator.*—March 28, 1865.—This invention consists in the arrangement of a series of tubes, which form the grate upon which the fuel rests, and the supply pipes which supply them with water, and carry off the steam generated therein. To accomplish this, a pipe is attached to the boiler below the water line,

which is provided with a stop-cock and valve for the purpose of regulating the amount of water to be admitted to the grate, and another is attached to the opposite end of the tubes constituting the grate, which communicates with the steam space of the boiler, through which the steam generated in the grate is conveyed thereto.

Claim.—The arrangement of the several parts herein described, viz: the stop cock *g*, the check valve *c*, the vent cock *h*, the tube or pipe constituting the grate, including its connections both with the boiler and the vent cock *h*, and the screen which covers and protects the grate, in the manner and for the purposes above described.

No. 47,054.—ELI THAYER, Worcester, Mass.—*Steam Generator.*—March 28, 1865.—This invention consists in so arranging a number of coils of pipe, graduated as to size of pipe, and each coil independent of the other, but each connected with the boiler in such manner that the heat from the boiler may pass around each in succession for the purpose of generating steam in them separately. These coils are connected to the boiler at both their extremities, and by shutting off the communication with the steam space of the boiler and allowing the communication with the water space to remain open, the current is reversed, and any deposit that may have taken place is forced out of the coil into the boiler. It further consists in providing a metallic false bottom to cover the inner surface or bottom of the boiler, by means of which all the water which comes in contact with the heating surface is immediately converted into steam and forced into the steam chamber. This false bottom is made to fit as closely as possible to the bottom of the boiler, so that only a very thin film of water can get between the two, and this is instantly flashed into steam, which causes the false bottom to rise a very short distance from the boiler, and this admits another small quantity of water to pass between the two, and thus the operation is repeated.

Claim.—First, the method of clearing the coils of sediment by reversing the steam in them.

Second, the false bottom or movable plate D, to be used in the manner and for the purposes described.

No. 47,055.—J. H. THOMAS and P. P. MAST, Springfield, Ohio.—*Cultivators.*—March 28, 1865.—In this invention the plough beams are suspended by hangers from the tops of two standards pivoted upon the axletree. An adjustable stop upon the side of a bar crossing the hangers prevents the plough from hitting the corn. A supplementary tooth is employed when required, by inserting the tooth shaft in journals upon front of plough beams.

Claim.—First, swinging the suspenders I I from the top of the standards G G, for the purpose set forth.

Second, the combination of plates H H, suspenders I I, and standards G G, as described and for the purpose set forth.

Third, so pivoting the rock-shaft O, from which the beams E are suspended as that, when the handle *a* is turned up and thrown forward, it shall remain in that position, and thus keep the plough suspended without the use of any catch or other device, substantially as set forth.

Fourth, the adjustable stop *k*, in combination with the adjustable stretcher K and suspenders I I, substantially as set forth.

Fifth, the shaft and journals *j j*, in combination with the braces *f* and drag bars F F, whereby the supplemental tooth may be readily attached, maintained in position, and allowed to swing backward when the wooden pin *c* is broken, substantially as described and set forth.

No. 47,056.—HOWARD TILDEN, Philadelphia, Penn.—*Flour Sifter.*—March 28, 1865.—This invention consists of a box with a hopper formed in the interior, below which is a shaft to which are attached India-rubber strips to act as brushes to sweep the flour over the semi-circular sieve and force it through to the lower part of the box.

Claim.—The combination of the equi-quadrilateral shaft C or its equivalent, having on two or more of its corners the rubber strips *i i*, or their equivalent, with the sieve B and the box A, substantially as described and for the purposes set forth.

No. 47,057.—A. R. TREADWAY and S. R. WARNER, New Haven, Ct.—*Valve for Steam Pipes.*—March 28, 1865.—This invention consists in placing a plate or valve seat diagonally across the pipe upon which the valve is placed, which is opened and closed in the usual manner. This valve, instead of being rigidly attached to its rod as is usual, is jointed to it in such a manner that, as the steam in the pipes forward of it condenses, and the water caused by condensation flows back against it, it is pressed up from its seat and the water is allowed to pass it and flow into any receptacle that may be provided for it, and thus the injurious effects of freezing are avoided.

Claim.—The hinged valve C combined with an inclined seat B, so as to operate substantially as and for the purpose specified.

No. 47,058.—JOSEPH TREVOR, Lockport, N. Y.—*Combined Desk and Work Table.*—March 28, 1865.—This invention consists in the combination of a writing desk and table, which latter also contains the pendent bag or flexible receptacle to fit the article for a lady's use. This article of furniture is made to fold up so that it may occupy a small space when placed away out of use.

Claim.—As a new article of manufacture, a convertible desk and work table, consisting of the pivoted cross frames A A′, falling top B, pivoted slat D, and flexible bag G, arranged and combined substantially as described.

No. 47,059.—BARNETT B. WHALEY, Brooklyn, N. Y.—*Flask Pins.*—March 28, 1865.—This invention consists in constructing the steady-pin or dowell of two separate parts, the plate or flange secured by screws to the flask, and the pin and means of securing and adjusting it to said plate. The end of this pin is widened out in one direction, and made wedge-shaped, one surface of which corresponds to the inclined bottom of a bed or recess made in the plate to receive it. In this recess it is secured by means of a set screw passing through a slot in the pin, and into a female screw in the plate. By this means the pin can be adjusted towards or from the side of the flask to which it is secured, to suit the eye in the corresponding part.

Claim.—An adjustable flask pin constructed with two inclined planes so arranged that, by moving one of the planes upon the other, the spindle of the pin can be adjusted to fit its socket in the manner and for the purposes set forth.

No. 47,060.—WILLIAM A. WHEELER, New York, N. Y.—*Operating Parts of a Fountain Inkstand.*—March 28, 1865.—This invention consists in making a button on the end of the pressure screw of a fountain inkstand, so as to withdraw an elastic diaphragm, as well as press upon it.

Claim.—The use of a diaphragm made of two thicknesses as described, for fountain inkstands, in combination with the double-headed button *h i*′ and screw *n*, and cap plate *p*, arranged and operating in the manner and for the purposes herein before set forth.

No. 47,061.—FREDERICK R. WILLIS, Waltham, Mass.—*Skate Sharpener.*—March 28, 1865.—This device consists of a short file secured between two plates, and having its edges either plain or rounded. At one end of the file is a projection or tram with a curved polished end to be used as a burnisher. The device may be adjusted to skate irons of different thicknesses.

Claim.—A file for sharpening skate iron, having either adjustable or fixed guides and provided with a burnisher, substantially as herein described and for the purpose specified.

No. 47,062.—BENJAMIN WRIGHT, Hudson, Mich.—*Washing Machine.*—March 28, 1865.—This invention consists in the combination of the rubbing device with adjustable arms, so that the rubber may be lifted from the tub, and a latch to hold it in a certain position.

Claim.—The rubber *c*, the arms G, the adjustable latch *j*, and the thumb screws *o*, the whole constructed and arranged substantially as herein set forth.

No. 47,063.—NATHAN L. ENGLISH, Hartland Four Corners, Vt., assignor to himself and JOSEPH F. LADD, New York, N. Y.—*Photographic Printing Frame.*—March 28, 1865.—This invention consists in attaching springs, having hooks on their ends, to the back of the pressure boards, and in dispensing with the outer frame.

Claim.—The combination of clamps formed by hoops or clasps hinged to the ends of springs with a printing board or pad, substantially as and for the purposes herein set forth.

No. 42,064.—RANSOM GREENE, assignor to JOSEPH BRIGGS, New York, N. Y.—*Wool Press.*—March 28, 1865.—This invention consists in a series of hinged plates to fold and press the wool, in combination with a mechanism for locking the press during the operation of bundling, and a device for holding the bundling strings.

Claim.—The hinged top piece, in combination with the folding sides, ends, and bottom, substantially as described and specified.

No. 47,065.—A. W. HALL, assignor to B. W. ROBINSON and S. P. CHAPIN, New York, N. Y.—*Universal Timepiece.*—March 28, 1865.—This invention consists of an ordinary clock, having upon its face a supplementary dial, which is divided into circles, each of which is marked with the name of a place and hours, and minutes, and which are so arranged that when the hour and minute hand indicate a certain time on the ordinary dial, the corresponding time at any other place can be read off the dial or ascertained by a slight addition or subtraction. When the clock is carried to any other place than that for which it is calculated, a supplementary minute hand is used to indicate the time.

Claim.—First, the employment or use of the dial of a clock or watch of two or more compound or double circles marked with different places, the two parts of each circle containing respectively the figures for the hour and minute hands calculated and arranged to correspond with the longitude of the places named on the circles, substantially as herein specified, for the purpose of allowing the ordinary hands of the clock or watch to keep the accurate time at different localities.

Second, making the circles of different colors, substantially as herein described, to aid the eye in tracing any given circle to any portion of the dial.

Third, the use of a supplementary adjustable minute hand, in combination with the supplementary dial arranged on the face of the clock or watch, substantially in the manner and for the purpose shown and described.

Fourth, so constructing the supplementary hand attached to and revolving with the ordinary minute hand that it can be turned or adjusted as described without interfering with the ordinary minute hand, or with the movement of the timepiece, as described.

Fifth, placing upon the different circles the names of other places than those for which the circles are calculated, at the same time naming the variations of said additional places from the circle, as and for the purpose set forth.

No. 47,066.—JOEL and HENRY R. LEE, assignors to themselves and W. C. CALKINS, Galesburg, Ill.—*Mop.*—March 28, 1865.—This invention consists in the combination of the handle with a head piece, stirrup, forked ferrule, and rods.

Claim.—First, the forked ferrule A and the rods B B, substantially as and for the purpose specified.

Second, the handle C, spring D, head-piece E, and stirrup F, in combination with the forked ferrule A and rods B B, substantially as and for the purpose specified.

No. 47,067.—A. Y. MCDONALD, assignor to himself and JOHN MORRISON, Dubuque, Iowa.—*Wrench.*—March 28, 1865.—This invention consists in making in the movable standard or bar, against which the screw operating the movable jaw abuts, a hole or mortise, a little longer than the width of the shank which it surrounds, so as to allow a small bolt on the outer lower edge of said mortise to be shifted and placed in any one of a number of holes in the edge of said shank; and also in making the socket in said standard of an oblong shape, so as to allow the screw which abuts therein to assume any desired angle thereto, to prevent it from being bent or strained.

Claim.—The elongated slot *d* in the bar G, in combination with the screw E, sliding jaw D, projection *f* on bar G, spring H, of spiral or other form, and the holes *g* in the shank A, substantially as and for the purpose set forth.

No. 47,068.—ANTONI MEUCCI, Clinton, N. Y., assignor to WILLIAM E. RIDER, New York, N. Y.—*Process for removing Mineral, Gummy, and Resinous Substances from Vegetable Fibre.*—March 28, 1865.—This invention consists in treating the fibre with gases generated by the action of nitro-muriatic acid upon carbonate of lime, iron, or equivalent material. The fibre is placed in a vat with a perforated false bottom, and the gases allowed to enter from the generator; after the dry fibre has been subjected to the action of the gas for a proper length of time, the flow of gas is stopped and water poured upon the fibre, and the gas again allowed to enter the vat. The fibre is then removed, steamed, and treated with caustic alkali, or with a composition of caustic alkali and oil.

Claim.—The improved process of treating a vegetable material by treating it first in a dry state with gaseous substances produced by the action of nitro-muriatic acid upon carbonate of lime and iron, or their equivalents; second, in a wet state, with the same substances; and third, with a caustic alkali, substantially as set forth.

Also, the process of treating the vegetable material which has been subjected to the first two operations above recited with a mixture of caustic alkali and oil, substantially as set forth.

No. 47,069.—JOHN W. MILLETT, Albany, N. Y., assignor to J. A. SUMNER.—*Construction of Paper Boxes.*—March 28, 1865.—The object of this invention is to construct cylindrical paper boxes so that the sides, bottom, and top may be cut from one piece of paper without waste. It is accomplished by a zig-zag cut along the centre of a strip of paper; the zig-zag portions forming the top and bottom when pasted together.

Claim.—First, the method, substantially as described, of constructing the body and top of a paper box from one piece of paper without waste, as herein set forth.

Second, the method of stiffening the ends of a paper box made out of one strip of paper, substantially as described.

No. 47,070.—SILAS SAFFORD PUTNAM and LUCIUS H. DWELLEY, Dorchester, Mass., assignors to S. S. PUTNAM & CO., Brooklyn, N. Y.—*Machine for Making Nails for Horse-shoes.*—March 28, 1865.—This invention is designed as an improvement in the machine described in the patent granted to Mr. Roberts, September 1, 1863, and consists, first, in an arrangement of mechanism for operating the heavy drop hammer used for swaging the shoe; secondly, in an arrangement of devices for holding the shoe in place upon the die or anvil, and for enabling the hammer in its descent to displace the same so as to leave the whole surface of the shoe exposed to its action; thirdly, a reservoir arranged adjacent to the die and certain devices by means of which the shoe and anvil may be flooded with water; and fourthly, an arrangement of devices for forcing the finished shoe up off the die or anvil.

Claim.—The drawing levers *c d e f*, in combination with the movable patterns *h i j k*, operating substantially as set forth.

Also, the levers or jaws *c d e f*, arranged in pairs, the patterns *h i j k*, the motion of which toward or from the nail rod is controlled by the wedges *o p* and springs *m*, or other suitable mechanical device, in combination with the cut-off Q R, or its equivalent, operating substantially as set forth.

Also, placing the ends of one pair of levers in advance of the ends of the other pair, and drawing them all simultaneously over the iron, substantially as set forth, for the purpose specified.

Also, in horse-shoe nail machines the use of movable patterns or formers, operating substantially as set forth, for the purpose described.

No. 47,071.—ANDREW J. ROBERTS, Boston, Mass., assignor to BENJAMIN F. BROWN, Dorchester, Mass.—*Machine for Making Horse-shoes.*—March 28, 1865; antedated March 13, 1865.—In this machine the device for drawing and shaping the nail consists of four small rollers attached to the ends of four horizontal bars, whose opposite ends are connected to the end of a reciprocating rod or pitman; the rollers, one for each side of the nail, being arranged in pairs, and so that one pair will be sufficiently in advance of the other to prevent interference. Each bar bears against and is guided by a pattern placed behind it, which cause the rollers, as they are drawn along over the projecting end of the nail rod, to impart to the metal the proper form, while at each successive forward movement of the roller jaws the patterns are set up, or forced nearer together so as to more and more reduce the diameter of the nail, by means of wedges which are gradually forced in behind the patterns by certain devices arranged for that purpose.

Claim.—First, the use of the heavy drop hammer *i* for hammering the top of the shoe, arranged and operated by means of the devices hereinabove described.

Second, holding, covering and uncovering the shoe, for the purpose specified, by means of the projecting piece *x* of vertical bar *w*, and plates *z z*, arranged together and operated by the downward movement of the hammer *i*, substantially as herein described.

Third, flooding the shoe with cooling liquid before taking it from the machine, substantially in the manner and by the devices described, the same consisting in surrounding the mould block with the reservoir *h'* filled, or nearly filled, with water or other suitable cooling liquid, which liquid is flowed at the proper times upon the shoe by means of the plunger *i'*, all arranged and operated substantially as described.

Fourth, the arrangement of devices for raising and lowering the punches *c' c'*, for the purpose specified, the same consisting of the wheel block *e*, connecting and projecting arms *f' f'* and rods *g' g'*, operating together substantially as described.

No. 47,072.—JAMES E. THORPE, Providence, R. I., assignor to himself and FRANCIS D. RIDDER, Boston, Mass.—*Valve for Steam Engine.*—March 28, 1865.—This invention consists in providing a curved valve and seat, the valve having two chambers with a partition between them, said partitions being of sufficient width to cover the eduction passage, so that each chamber acts as an exhaust passage for their respective ends of the cylinder.

Claim.—Providing the valve with a single curved seat and a single corresponding bearing therefor, and with two chambers and a partition arranged in the valve, as described, and three ports leading from the seat, and with the area or width of the bearing surface of the partition greater than the mouth of the central port, the whole being substantially as hereinbefore described.

No. 47,073.—S. R. WARNER, assignor to himself and A. R. TREADWAY, New Haven, Conn.—*Valve for Steam Pipe.*—March 28, 1865.—This invention consists in constructing the valve plate or seat so that it may lie diagonally across the pipe in an elliptical form and inclined sufficiently to allow the gate or valve to be opened within the circumference of the pipe.

Claim.—Constructing a valve plate, as described, so that it may be set in pipes in the manner and for the purpose specified.

No. 47,074.—EDOUARD ANDRIES, Schaerbeck, Belgium.—*Filter.*—March 28, 1865; patented in Belgium, February 20, 1864.—In this invention the filter is to be submerged. Its outer and inner walls are perforated, having several strata of filtering media between; the water is drawn from near the bottom of the filter, where a sponge protects the mouth of the tube through which it is drawn; a cup beneath this sponge receiving the sediment.

Claim.—The specific combination of the filtering media, arranged in layers, as set forth, the sponge at the end of the suction pipe and the receptacle below the sponge for retaining the impurities.

No. 47,075.—THOMAS RIDER, Valparaiso, Chili.—*Pump.*—March 28, 1865.—In this invention a "mud-box" is formed around and below the foot valve for the purpose of withholding from the valve chamber such heavy and gross particles of matter as may ascend in the induction pipe, and into which such matters may descend by gravitation to be subsequently removed at discretion by the operator.

Claim.—The mud-box E, applied in combination with the suction pipe D, and foot valve *a*, in the manner and for the purpose as substantially set forth.

No. 47,076.—JOHN SMITH, Wentworth Road, &c., Great Britain.—*Fusible Plug for Boiler.*—March 28, 1865; patented in England, April 14, 1863.—This invention consists in recesses or grooves formed in the fusible plug, whereby to increase the power of the fusible

metal to resist shearing, and an arrangement of the parts so that a portion of the device may remain attached to the boiler when the part containing the fusible metal is removed.

Claim.—First, the construction of fusible plugs, with recesses or grooves, for the purpose of increasing the power of the fusible metal to resist shearing, substantially as described.

Second, the construction of fusible plugs, with an additional part which may remain screwed into or otherwise attached to the boiler, when the part containing the fusible metal is removed, as described.

No. 47,077.—Francis William Webb, Monks Chippenhall, Crewe, England.—*Construction of Fagots.*—March 28, 1865.—This invention is fully set forth in the claim.

Claim.—Forming piles for the manufacture of steel-faced rails by the combination of old rails, puddle bars, and facing slabs of cast steel, the semi-crystalline puddle bars being interposed between the fibrous old rails and the crystalline steel slabs, so as to combine the materials of these two by a material which partakes of the nature of each, substantially as described.

Also, forming the piles for the manufacture of steel-faced rails by the combination of iron bars with facing slabs of cast steel provided with intermediate projections on their inner surfaces for the purpose of facilitating the welding of the steel to the iron, substantially as set forth.

No. 47,078.—Clifford Arick, St. Clairsville, Ohio.—*Packing Projectiles for Rifled Ordnance.*—March 28, 1865.—In this invention a metallic sabot is provided with an annular flange or sleeve, which fits upon a tapering recess at the rear of the projectile, having a square shoulder to limit the forward wedging of the annular flange; and the rear of the sabot is formed into a concave disk, to be flattened and expanded by the action of the charge, as the annular sleeve is driven forward on the base of the projectile.

Claim.—The annular key a', in combination with an expanding disk a, constructed, applied, and operated substantially as and for the purpose set forth.

No. 47,079.—Charles H. Amidon, Greenfield, Mass.—*Wringing Machine.*—April 4, 1865.—This invention consists in the employment of an endless chain, in combination with a pulley wheel and gear wheels attached to the shafts of the rollers so that the rollers are propelled by the chain.

Claim.—The endless chain S, in combination with the wheels P P′, and wheel R, with the rollers D and B, substantially as and for the purpose specified.

No. 47,080.—L. L. Arnold, New York city.—*Cigarette.*—April 4, 1865.—This invention consists in inserting in the end of a cigarette a quill to serve as a mouthpiece for holding it firmly between the teeth.

Claim.—First, as a new article of manufacture, a cigarette constructed and combined in the manner described.

Second, the method herein described of making the same.

No. 47,081.—Thomas Atkins, Cincinnati, Ohio.—*Cabinet Organ or Harmonium.*—April 4, 1865.—This invention consists in so arranging the stops or swells, with regard to a common lifting bar, as to admit of their being operated by the foot or knee.

Claim.—So arranging the stops or swells of an organ or harmonium with regard to a common lifting piece F, operated by a foot or knee pedal, as that they may all, or any one, two, or more of them, be opened or closed by said pedal, without raising the hands from the keys, substantially as herein described.

No. 47,082.—Robert Bartholow, Cincinnati, Ohio.—*Manufacture of Blacking, &c.*—April 4, 1865.—This invention consists in heating petroleum with sulphuric acid until the petroleum is blackened or carbonized. Bone black is then added, and the mixture heated until the ingredients are thoroughly incorporated. As the mixture cools pyroligneous acid, wheat flour, molasses, and gum arabic are added and the whole incorporated together.

Claim.—The manufacture, compounding, and preparation of a new and improved kind of oil blacking, for leather, boots, shoes, harness, and other articles manufactured in whole or in part of leather, composed of the ingredients above named, and manufactured, compounded, and prepared in the manner and for the purposes substantially as set forth at large above.

Also, as a new manufacture, oil blacking for leather and other articles, made by combining petroleum or any of its products, or other hydro-carbon oils, treated substantially as hereinbefore set forth, with any suitable acids, oxides, gums, or resins, substantially in the manner specified.

No. 47,083.—Robert Bartholow, Cincinnati, Ohio.—*Oil for Paint.*—April 4, 1865.—This invention consists in heating petroleum with a mixture of suphuric and nitric acid until flames of nitrous acid are given off, after which it may be mixed with white lead, &c., in the same manner as linseed oil.

Claim.—The manufacture and preparation of a new and improved kind of oil for mixing

and compounding with white lead, zinc, white and other mineral paints and pigments, in lieu of linseed oil and other paint oils, and for other purposes, composed of the ingredients above named, and compounded, manufactured, and prepared in the manner and for the purposes substantially as set forth above.

No. 47,084.—ROBERT BARTHOLOW, Cincinnati, Ohio.—*Process of Preparing Petroleum for the Manufacture of Paints, &c.*—April 4, 1865.—This invention consists in treating the petroleum with sulphuric or nitric acid, and adding to this a solution of glue in acetic acid. To the oil thus prepared, white lead, zinc white, and various colors are added as may be desired.

Claim.—The manufacture, compounding, and preparation of paints for common purposes, of various colors and shades of color, and embracing all colors and shades of color, from crude petroleum and refined petroleum, in combination with sulphuric acid, nitric acid, acetic acid, common glue, dry white lead, otherwise known as carbonate of lead, dry white zinc, otherwise known as oxide of zinc, and other white pigments and pigments of various colors, combined in the proportions and in the manner substantially as set forth above.

No. 47,085.—JOHN BLAKENEY, Philadelphia, Penn.—*Machine for Securing Soles to Boots and Shoes.*—April 4, 1865.—This invention relates to a mode of attaching soles to the welts of boots. It chiefly consists in a screw rod, with its internal wire, and a nut composed of two or more arms, operating upon the screw rod, and in two or more cutters, &c.; the whole being in combination with other devices designated in the claim.

Claim.—First, the screw rod I and its internal wire x, and the nut, composed of its arms G and G′, or their equivalents, in combination with the system of gear wheels herein described, or the equivalent to the same, whereby the said screw rod is caused to revolve at a faster speed than the nut, for the purpose specified.

Second, two or more cutters 4 and 7 arranged in the projection m of the rocking frame, in respect to the wire x, in combination with the slotted plates 10, or their equivalents, for adjusting the said cutters, as set forth.

Third, the support 24, adapted to the last, in combination with the movable plate Y, and the devices herein described, or the equivalent to the same, whereby the said support can be adjusted vertically and laterally in the manner described.

Fourth, the combination of the plate Y, adjustable plate 14, rocking frame 19, adjustable support 24, and sliding support 15; the whole being arranged and operating substantially as and for the purpose herein set forth

No. 47,086.—J. BLAIR BOWDITCH, New Haven, Conn.—*Spring Bed Bottom.*—April 4, 1865.—This invention consists in the employment of short elastic slats, one at each end, being placed under the common spring slats, forming an elastic bottom.

Claim.—The combination of the slats B B with the wooden springs D D, as herein described, for the purpose specified.

No. 47,087.—CHARLES H. BUCKALEW, Jersey City, N. J.—*Lamp Cone.*—April 4, 1865.—This invention consists in the construction of lamp cones, with a metallic base and a bifurcated connecting arch, with a filling or dome of glass blown or cast within the said frame.

Claim.—The construction of the cone frame with a metallic base and bifurcated connecting arch, with a filling or dome of glass blown or cast within the said frame, substantially as herein described and represented.

No. 47,088.—JOHN W. COCHRAN, New York, N. Y.—*Breech-loading Fire-arm.*—April 4, 1865.—In this invention a pivoted breech block, hollowed out or concave at its under side, is rigidly connected with the trigger-guard lever, so as to be raised as a lever is depressed, whereby the chamber is opened beneath, so as to be loaded at the under side of the arm.

Claim.—First, so constructing and applying a breech block, having a movement such as is herein described, as to provide for the insertion of the cartridge into the barrel from the under side of the stock of a fire-arm, substantially as herein specified.

Second, providing a cavity c, substantially as herein described, in the under side of such a breech block for the reception of the cartridge when the gun is in the inverted position shown in Fig. 3, whereby the movement of the said block, which is necessary for the insertion of the cartridge into the chamber of the barrel, is greatly reduced, and the discharged cartridge shells are steadied while being withdrawn from the barrel.

Third, the construction and arrangement of the rear end of the breech-operating lever e, substantially as herein described, whereby an opening between the said end of the breech block and the stock is avoided.

No. 47,089.—J. W. COLWELL, Macedonia, Ohio.—*Railroad Switch.*—April 4, 1865.—This invention consists of a switch so constructed that the cars will be guided upon the main track at either end, in case the switch is not shifted to the proper position.

Claim.—First, the guards C C′ d d' and guard rails D D′, in combination with the switch rails, when arranged as and for the purpose set forth.

Second, placing the main track A A′ on a tangent with, and at the junction of, the side track B B, in combination with the guards and guard rails, substantially as and for the purpose specified.

No. 47,090.—William H. Converse, New Castle, Me.—*Harrow and Roller Combined.*—April 4, 1865.—This invention consists in combining a harrow with a roller, and arranging the former in such a manner that it may be readily cleaned from weeds and trash which may engage or become entangled in its teeth, and also be capable of yielding to conform to the inequalities of surface over which it may pass.

Claim.—The harrow E fitted in or to the frame A, substantially as shown, in combination with the bent bar F, provided with the plate G, and a rear part *g*, having a relative position with the harrow teeth *c*, as described, the sides *f f* of F being fitted loosely on the harrow shaft D, and bar F, and harrow E, connected by a spring H, the above parts being applied to the frame A of a roller C, and all arranged to operate substantially as set forth.

No. 46,091.—David T. Cross, Cincinnati, Ohio.—*Railroad Car Brake.*—April 4, 1865.—This invention relates to that class of railroad car brakes which are adapted to operate continuously on an entire train, and consists in a provision for equalizing the rubber action throughout the train, and for bringing the rubbers in the rear portion of the train immediately and effectively into service.

Claim.—The self-acting pawl K and its described or equivalent accessories, for the object set forth.

No. 47,092.—John M. Dailey, New York, N. Y.—*Trunk Stay*—April 4, 1865.—This invention consists in the use of one or more curved bars, or plates, moving upon suitable guiding pins in the cover and body of a trunk or case, and in the combination with an ordinary hinge of a plate, free to slide in grooves, having the direction of a curve, the centre of which is at the turning point of the hinge.

Claim.—The use of one or more curved bars or plates moving upon suitable guiding pins in the cover and body of a truuk or other case, arranged and operating substantially as herein described and for the purpose specified.

Also, the combination with an ordinary hinge of the curved bar *h*, arranged together and operating substantially as and for the purpose specified.

No. 47,093.—William Dishbrow, San Francisco, Cal.—*School Seat and Desk.*—April 4, 1865.—This invention consists in combining on a part of a school desk grooved bars, to which is attached a sliding seat, with legs which have rollers upon their extremities, so that the seat can pass under the desk and out in front of it.

Claim.—The arrangement of the grooved bars K and sliding seat M, with the standards E and desk A, in the manner herein shown and described.

No. 47,094.—M. B. Dodge, New York, N. Y.—*Desulphurizing Ores.*—April 4, 1865.—This invention consists in mixing the pulverized ore with common salt, and subjecting it to the action of steam in a close box with a perforated false bottom, by which means the ore and salt are thoroughly incorporated without saturation with water, (which would render the mass difficult to handle,) by automatic mechanical devices.

Claim.—Mixing the ore and salt in a dry state and afterward steaming them within a close vessel in a perforated bottom.

No. 47,095.—William Foster Dodge, New York, N. Y.—*Pump Piston.*—April 4, 1865.—In this invention the piston is a cylinder of more than usual length, having slots or perforations in its sides and a valve near its bottom. Exterior to the cylinder is a flexible tube, held in position by suitable devices. This flexible exterior part is to be pressed out against the pump cylinder by the weight of the water in and above the piston.

Claim.—First, the expanding band D, in combination with the shell A, having a series of openings through which the pressure of the column of water or other fluid acts against the interior of the said band, substantially as and for the purpose herein specified.

Second, a piston, composed of a hollow shell A, having openings *a a* in its sides and a valve seat and valve at or near its bottom, and a surrounding band of leather or other soft, elastic, or flexible material confined to the said shell between the said openings, by means of rings *c c*, the whole combined substantially as and for the purpose herein specified.

No. 47,096.—Philip Ely, New York city.—*Protector for Baskets.*—April 4, 1865.—This invention consists in the application to a basket of a metallic frame, adjustable vertically and circumferentially by means of a series of holes in the former direction, and by slots in the latter, whereby the frame is adapted to either a large or a small basket.

Claim.—A metallic frame, adjustable or otherwise, applied to baskets in the manner substantially as and for the purpose herein set forth.

No. 47,097.—Samuel D. Fales, Central Falls, Smithfield, R. I.—*Screw Steam Valve Cock.*—April 4, 1865.—The annular valve seat has a V-shaped groove upon its face, and the valve has a corresponding ring to turn these in.

Claim.—Constructing the valve and valve seat for a steam or water valve cock, in the manner substantially as described, for the purposes specified.

No. 47,098.—Remy Fiegel, Montgomery county, Pa.—*Railroad Draught Bar.*—April 4, 1865.—This invention consists of several series of springs confined within the cast-iron boxes, constructed to slide the one within the other during the action of the draught rod, which passes through and keeps the boxes together, and the springs between the boxes. The whole is supported and secured firmly between two cross beams of the platform of the car, so as to operate in combination with a buffer rigidly fixed to the said cross beams or their equivalent, and with the usual bolt and shackle.

Claim.—The boxes A A′, springs B B′ B′ B′ B′, rod C, bolt F, and shackle G, in combination with a buffer E, rigidly fixed to the platform of a car, the whole being constructed, arranged, and applied so as to operate together, substantially as described and set forth, for the purposes specified.

No. 47,099.—Henry Furnel, Huntington, N. Y.—*Remedy for Disease in Trees.*—April 4, 1865.—This invention consists in a composition of whale oil, soap, sulphur, oxide of iron, wood ashes, soot, and lampblack.

Claim.—The combination of the hereinbefore-mentioned ingredients, for the purpose set forth, substantially in the proportions described.

No. 47,100.—E. P. Furlong and E. M. Lang, Westbrook, Me.—*Mode of Rendering Wick Incombustible.*—April 4, 1865.—This invention consists in saturating the wicks with a mixture of alum, plumbago, and water.

Claim.—First, a wick rendered incombustible by saturation or coating, substantially as described.

Second, saturating or coating a wick to prevent its combustion, substantially as described.

Third, rendering a wick incombustible by saturation in plumbago, or its equivalents, as described.

No. 47,101.—John W. Haines, Somerville, Mass.—*Silvering Glass Pitchers.*—April 4, 1865.—This invention consists in the method of forming the walls of pitchers, &c., to be silvered. A quantity of glass, in a semi-fluid state, is attached to the mouth of a pitcher or other article, and the air exhausted from the vessel, which causes the glass to expand and form a hollow shell within the vessel, leaving a space between it and the wall of the said vessel.

Claim.—The dropping on of the hot glass on the outside rim of the pitcher, and by means of suction with the mouth, expanding the solid piece of hot glass into oval shape, producing two compartments as above described.

No. 47,102.—D. Frank Hartford, Boston, Mass.—*Screw-driver and Tweezers.*—April 4, 1865.—This invention consists in combining with a screw-driver a pair of tweezers, so connected by means of a sleeve which is made to slide upon the shank of the screw-driver, as to pass the points of the tweezers out beyond the end of the screw-driver when the tweezers are being used, or back when the screw-driver is being used; a coiled spring around the shank of the screw-driver, inside of the handle, forces the tweezers outward, and when they are forced backward by the thumb and finger against the spring, a small thumb-spring catches in a notch in the screw-driver shank and holds them back. It is designed for watchmakers' use.

Claim.—First, the wires *k k*, and pin *j*, or their equivalents, in combination with the tweezers and screw-driver, substantially as and for the purpose described.

Second, throwing the points of the tweezers beyond the point of the screw-driver, by means of the spring, &c., substantially as set forth and for the purpose described.

Third, the spring lever *l*, to operate substantially as described, in combination with the tweezers, the indentation *n*, and shoulder *m*, for the purpose described.

No. 47,103.—Edmund A. Yates, Wilmington, Del.—*Machine for Cleaning Sheet Iron.*—April 4, 1865.—This machine consists of a series of feed rollers, which pass the sheet between a series of revolving brushes and another pair of flat brushes, which have a reciprocating motion across the top and bottom surface of the sheet, upon which, meanwhile, jets of water are forced through small tubes for that purpose. The sheet then passes between two elastic squeezing rollers, which deprive it of a great proportion of the moisture, and then passed over a furnace, which completes the drying process.

Claim.—First, cleansing sheets of metal by scrubbing and washing them, and preventing them being oxydized thereby by immediately afterward subjecting said sheets to heat, and thus causing all moisture to be evaporated from their surfaces, substantially as described.

Second, the combination of the squeezing rollers E E, and a heater for quickly drying the sheets, substantially as described.

Third, the rotary brushes C C, in combination with the reciprocating brushes D D, and feed rollers, all arranged substantially as and for the purpose specified.

Fourth, the water tubes H, in combination with the brushes and feed rollers, arranged to operate as set forth.

Fifth, the heater I, when used in combination with the brushes and feed rollers, and arranged to operate in connection therewith, for the purpose described.

No. 47,104.—HENRY HEITMAN, Brooklyn, N. Y., and JOHN RADICAN, New York, N. Y.—*Screw Windlass and Capstan.*—April 4, 1865.—This invention consists in a combination of two sets of gear wheels, for a variation of speed and power; also, in the combination of the capstan barrel with toothed wheels, pawls, and stationary locks on the bed plate, so that by a change of pawls the capstan and windlass may more readily be connected or disconnected.

Claim.—First, the gear wheels V V, applied in combination with the gear wheel D, worm wheels L L, capstan E, and windlass I I, substantially in the manner as herein set forth, so that the capstan can be readily connected or disconnected from the windlasses, and a more or less powerful force can be exerted, according to the work to be accomplished.

Second, the combination of the capstan barrel E, pawls G G G, and toothed wheel D, with pawls F F, and with stationary locks in the bed plate B, substantially as described, so that by a simple change of the pawls F and G, the capstan barrel can be used independently or in connection with the parts to which motion is imparted by the gear wheel D.

No. 47,105.—GEORGE F. HASSENPFLUG and GEORGE BARNHART, Green township, Ohio.—*Cultivator.*—April 4, 1865.—In this invention the frame is of a horse-shoe shape, and of one piece of bent timber. The plough standards are adjustable, and swing back upon hinges when the wooden pin is broken by any obstacle. The handles are also adjustable.

Claim.—The frame *a c*, when constructed as described, in combination with the plough standards *b b b b*, the same being attached as specified.

No. 47,106.—W. P. L. HERR, Brooklyn, N. Y.—*Instrument for Cutting Potato Seedlings.*—April 4, 1865.—This invention consists of a hollow spoon, scoop, or cutter, with a metallic or wooden handle, to which the spoon is attached, either rigidly or so as to be capable of motion. The instrument is used to cut out seedlings from potatoes, and also to shape them into half balls or other desired forms.

Claim.—A scoop or cutter constructed substantially as shown in Fig. 2, for the purposes herein described.

No. 47,107.—JAMES H. HOFFMAN, New York, N. Y.—*Manufacture of Sweat-proof Paper Collar.*—April 4, 1865.—This invention consists in applying to the paper a coating of the following composition: Ten pounds of "blanc fix," one pound of isinglass, and one pound of white wax, dissolved in alcohol. The paper after being dried is run through a sizing machine, to harden and smooth the surface. A thin coating of bleached shellac dissolved in alcohol is then applied, and the paper again passed through a sizing machine. The paper is then passed through a fluting machine, and receives the finish desired.

Claim.—The manufacture of sweat-proof paper collar, with the composition substantially as described, applied in the manner substantially set forth.

No. 47,108.—EDWARD P. HOWLAND, Worcester, Mass.—*Car Coupling.*—April 4, 1865.—This invention relates to the peculiar construction of a drop-bar or weighted coupling bolt, and to an arrangement of certain springs, by which a slide block is operated, which supports the drop-bar previous to the application thereto of the link.

Claim.—The drop-bar B, made in shape substantially as herein described, having a pin *c* and shoulder *o* near its lower end, and when part of the same is made with wrought iron, with metal cast around it, substantially as and for the purpose set forth.

No. 47,109.—W. F. KEELER, La Salle, Ind.—*Governor.*—April 4, 1865.—This invention consists in providing a metallic case with vertical sides and a flat bottom, closed at all points except at the centre, through which at the top the shaft passes, and near its outer edge, where it is perforated, to allow the mercury gauge to be inserted. At the bottom of the metallic case a piston plate is fitted, which is operated by a rod extending down from the governor. The case above the piston is filled with mercury, and this communicates with the mercury in the gauge, so that the speed of the water increases, and the governor bells expand. An upward movement is imparted to the piston, and a portion of the mercury contained in the case is forced into the gauge, which is graduated upon the outside, and thus the speed of the water is indicated, as well as regulated. When a diminution of the speed occurs, the weight of the column of mercury in the gauge operates upon that in the case, and that upon the piston, and thus through its connection with the governor, causes it to return it to its normal condition.

Claim.—First, combining with the balls and connecting arm of an ordinary governor for regulating and measuring the speed of a steam engine, or other machine, a column of mercury *k*, resting upon a disk or movable bottom in the case in which the mercury is enclosed, substantially as above described.

Second, the combination of the mercury gauge O with the closed case G, the movable disk I, and the shaft B, substantially as above described.

Third, the combination of the movable disk I and shaft B with the closed case G, for containing mercury, substantially as described.

Fourth, balancing or controlling the centrifugal force of the balls, or other rotating apparatus of a governor for regulating speed in machinery, by means of the weight of a column of mercury rising within a gauge O upon the stationary frame, as herein described.

No. 47,110.—WILLIAM KINNARD and J. B. DREHER, Cleveland, Ohio.—*Melodeons.*—April 4, 1865.—This invention consists in the mode of producing a swell by means of a spring door, to which the treadles are connected, so as to operate the swell and bellows at one time.

Claim.—First, hanging the door or panel to the case in combination with the treadles, substantially as and for the purpose described.

Second, the arm G and rod H, in combination with the levers I and J and swell, substantially as and for the purpose described.

Third, the hinged panel A, treadles B, in combination with the arm G, rod H, and levers I J, substantially as and for the purpose described.

No. 47,111.—HIRAM KIPE, Thornbury, Penn —*Stove-pipe Damper* —April 4, 1865.—This invention consists in a stove pipe in which a wind wheel, moved by ascending products of combustion, operates a spindle, to which, outside of the pipe, is attached a ball governor. From an arm extending from the top of the spindle motion is communicated to a throttle-valve in the pipe.

Claim.—Combining with an ordinary stove pipe a wind wheel T, a spindle *d*, and ball governor Q, for operating a throttle-valve V, substantially as above described.

No. 47,112.—ROBERT KRAUSE, New York.—*Mattress.*—April 4, 1865.—Within an ordinary frame for the reception of a mattress is arranged at the upper end a second movable frame of about the same depth, and of a little less width, but of only one-third the length, more or less. The stuffing of this secondary frame is separate from that of the main frame. Through the centre of the top piece of the secondary frame passes a screw, by means of which it can be raised to any desired height with its stuffing, and thus made to take the place of pillows.

Claim.—The application of a movable partial frame, adjusted by a screw, and held in position by spring tongues to any common mattress frame and spring bottom, by means of which frame, screw, and spring tongues any spring-bed mattress can be turned into a comfortable bed, without the aid of cushions and pillows, as herein described.

No. 47,113.—WILLIAM J. LEWIS, Pittsburg, Penn.—*Manufacture of Bolts.*—April 4, 1865.—This invention consists in enlarging that portion of the cylindrical blank or section by a round rod, of which it is designed to form the head and neck of the bolt by upsetting the same in a cylindrical die, after which the blank is conveyed to other dies, which form the square neck by lateral compression, and which at the same time maintain the blank firmly, while the thread is being formed by a heading punch in the usual manner.

Claim.—Making bolts with square necks from old iron, by first staving up or enlarging that part of the rod intended for the neck previous to the formation of the square, and subsequently squaring that part by compression or otherwise, without regard to the nature of the tools used for that purpose.

No. 47,114.—JOHN A. LIEB and JOHN SCHMADEL, Newark, N. J.—*Roller Cleat for Trunks.*—April 4, 1865.—This invention consists in the arrangement of mortises or cavities in the cleat of a trunk, in combination with rollers, the axles of which have their bearings in the side of said mortises, in such a manner that the rollers can be secured to the cleat without the use of metal brackets.

Claim.—As an improved article of manufacture, the trunk cleat A, provided with rollers *b b*, inserted in mortises *a a*, all as herein specified.

No. 47,115.—IRA E. LOUGHBOROUGH, Pittsford, N. Y.—*Heel and Toe Plate for Boots and Shoes.*—April 4, 1865.—This invention consists in the construction of a metalic heel and toe plates for boots and shoes, with several lips projecting inward from the upper edge of the plate, one or more of said lips being provided with a point or spear, which is forced into the heel.

Claim.—The external plate *b*, when provided with projecting lips *c* and points *e*, it being secured to the boot by the clamping lift or lifts *f*, which are nailed on within the encircling rim of the plate, the edge of the lifts being entirely protected from wear by the said rim or flanges.

No. 47,116.—G. C. MARTEN, Cleveland, Ohio.—*Watches.*—April 4, 1865.—This invention consists in a main spring barrel, composed of two parts, one inside the other, the outer barrel being rigidly connected to the main gear wheel, and the inner barrel carrying the

winding arbor, the main spring, and maintaining ratchets. Upon each of the barrels is a stop, arranged in such a position that when the spring is wound up the inner barrel turns independently of the outer, until the two stops come in contact, when both revolve as one. Should the main spring break, the inner barrel flies back, until it nearly completes a full revolution, thus expending the force of the spring, and preventing injury to the mechanism of the watch.

Claim.—A main spring barrel, constructed of an outer barrel B, and an inner barrel C, which are provided with stops *d e*, and combined with the main spring, winding arbor, and retaining power, in the manner and for the purpose substantially as herein set forth.

No. 47,117.—W. T. MERSEREAU, Newark, N. J.—*Furniture Caster.*—April 4, 1865.—In this invention the balls of this caster have on two opposite points projecting trunnions, which take in a groove within the side of the containing cylinder, and thus the ball has a circular horizontal movement.

Claim.—The ball or roller B, provided with the journals *b*, when the same shall be constructed as shown, for the purpose specified.

Second, in combination with the same the base A, ring C, and collars *d d2*, when the same shall be combined substantially as shown, for the purpose set forth.

No. 47,118.—J. A. MILLER, New York, N. Y.—*Boiler Furnace.*—April 4, 1865.—In this invention, through chambers on either side of the furnace and horizontal openings slanting inwardly, are passages for air to flow into the back part of the combustion chamber, and above the fuel. Nearly in the centre of the furnace is the fire bridge. The furnace door is lined, the inner plate having lateral oblique openings, and the outer a damper. To the lower hinge of this door, which is hollow, is attached an air pipe, connected with a blowing apparatus; the pintle and socket are made with openings like a cock, and so arranged that a passage for air to blow across the mouth of the furnace is opened by opening the door, and closed by shutting it.

Claim.—First, the slits or openings *a a* in combination with the horizontal passages E in the side walls of the fire chamber, and with the ducts D in communication with the ash pit, substantially as and for the purpose herein specified.

Second, giving the openings *a a* an inward horizontal inclination toward the bridge wall or rear of the fire chamber, substantially as and for the purpose herein specified.

Third, the pier G, and side openings *c c* over the fire bridge, in combination with a system of stilts or openings *a a* for the admission of air through the side walls of the fire chamber, substantially as and for the purpose herein specified.

Fourth, the laterally oblique arrangement of the perforations *g g* in the back or inner screen I of the fire door, substantially as and for the purpose herein specified.

Fifth, the hollow hinge *h i* in combination with one or more openings *m n* in the door or fire front, and with a pipe *j* for the introduction of air from a blowing apparatus, whereby a current or currents of cold air are discharged in thin sheets across the open doorway, substantially as and for the purpose herein specified.

No. 47,119.—IVON B. MILLER and WM. H. MILLER, Philadelphia, Penn.—*Manufacture of Packing for Pistons.*—April 4, 1865.—This invention consists of a fibrous tube, filled with a composition of powdered soapstone, resin, or plumbago, or filled with fibrous material saturated thoroughly with such substances. The covering may be put on by brading, and may be strengthened by wrapping the wire.

Claim.—First, the application of dry powdered substances to the fibrous material for the manufacture of packing in the manner above described, or any other substantially the same, and which will produce the intended effect.

Second, the fibrous braided cover as applied to packing, in the manner and for the purpose above described, or any other substantially the same, and which will produce the intended effect.

Third, the application of powdered substance to the fibre before it is made into yarn, as above described, or any other substantially the same, and which will produce the intended effect.

Fourth, the use of the cover made of one kind of fibre and the inside or filling made of another kind, without the use of powdered substance, as above described, or any other substantially the same, which will produce the intended effect.

No. 47,120.—JOHN D. METS, Dubuque, Iowa.—*Construction of Albums.*—April 4, 1865.—Thick leaves of photograph albums are connected preparatory to being bound into loose form by narrow strips of leather, cloth, or other material, pasted along the edges of the leaves longitudinally, to which strips the filling boards which give the requisite degree of stiffness to the leaves are connected by means of some thin facing material pasted over the filling boards, and extending a short distance over the aforesaid strips.

Claim.—Connecting together the leaves of books by means of strips of leather, cloth, or the equivalents thereof, applied substantially as described.

No. 47,121.—Clark Mills, Washington, D. C.—*Mode of Taking Casts from the Face of Living Persons.*—April 4, 1865.—This invention consists in placing the person in an upright position, and spreading the plaster in a thin layer over the face, so that it can be broken off by the mere working of the muscles; the pieces are joined and strengthened to form the mould.

Claim.—The mode of process herein described.

No. 47,122.—Albert Morton, South New Market, N. H.—*Valves for Steam Engines.*—April 4, 1865.—This invention consists in providing two port covers, one at each end of the main valve, the two being connected together by a rod or rods, and combined with a cross-head and screw-rod, in such a manner that, by turning the rod, these port covers are adjusted and the steam is cut off at any desired point of the stroke. The covers or cut-offs work upon the same seat as the main valve, and cover or uncover the several induction ports of the engine, and by turning the screw-rod so as to entirely prevent the ingress of steam to the cylinder, or allow it free passage, during the full stroke of the piston.

Claim.—The use of two port covers C C′, one at each end of the valve, and connected together by a rod or rods, or their equivalents, in combination with the cross-head D and regulating rod *g*, constructed and operating substantially as and for the purpose set forth.

No. 47,123.—Owen E. Mosher, New York, N. Y.—*Refrigerator.*—April 4, 1865.—This invention consists in the addition to a refrigerator of a water tank, from which, through the refrigerator, cooled water can be drawn from outside. It consists also of an ice chamber, a trough, and water tank.

Claim.—The combination of the ice chamber B, trough C, and water tank D, when the said parts are constructed and arranged in the manner and for the purposes herein specified.

No. 47,124.—George C. Paine, San Francisco, Cal.—*Baling Press.*—April 4, 1865.—This invention consists in the use of a toggle applied to a hay press in such manner as to afford an efficient mechanism for operating the follower and compressing the hay, &c.; also in the arrangement of fastenings for the side and top doors of the press, whereby the same may be readily opened and shut.

Claim.—First, the peculiar arrangement and construction of the double toggle levers connected with the follower D, in combination with the chain or ropes *s s*, pulley H H, and friction rollers *g′*, whereby the shaft and wheel are located on the outside of the vertical press box, for the purposes described.

Second, the levers I N and bars *n n*, connected together and applied to the top K of the press box, as shown, in combination with the catches L L, all arranged substantially as and for the purpose herein set forth.

Third, the loops or catches R R applied to the shafts *p p*, connected at their upper ends by the rod *q* and cranks *r r*, and arranged relatively with the sides O O, substantially as and for the purposes herein set forth.

Fourth, the connection of the pintles of the hinges of the side doors O O by means of the pulleys P P and cross-chain Q, substantially as and for the purpose specified.

No. 47,125.—James Perkins and Wm. H. Burnett, Newark, N. J.—*Apparatus for Distilling and Refining Petroleum.*—April 4, 1865.—This invention consists of a still connected with a receiver. The crude petroleum is forced into the receiver, and the lighter oils are driven over, in the form of vapor, into the condenser; the receiver being heated by a steam jacket. The petroleum is then allowed to pass into the still, which is provided with agitators, and a receiver to carry off the residuum. The heat of the fire causes the petroleum to pass over, in the form of vapor, into the condenser; the pump being used to exhaust the air and facilitate the evaporation.

Claim.—First, the combination of the receivers C and K with the agitator N and sediment receiver M, substantially in the manner and for the purposes described.

Second, the combination of the parts C E K N and O, substantially in the manner and for the purpose described.

Third, the use of the exhaust pump H and R, in combination with the distilling and condensing apparatus described, substantially in the manner and for the purposes set forth.

No. 47,126.—O. C. Phelps, New York, N. Y.—*Feed Wheel as a Substitute for Ratchets or Pawls.*—April 4, 1865.—This invention consists in a movement in machines in which a feed wheel is used, by which the feed may be readily reversed or stopped.

Claim.—The combination of the shifting apparatus, above described, with said wheel and clutch, as and for the purpose herein set forth.

No. 47,127.—Rufus S. Picket, New Haven, Conn.—*Percussion Cap-holder for Fire-arms.*—April 4, 1865.—The caps are arranged in a row around the interior of an oblong box upon an endless belt extended between a small pulley and a ratchet wheel, which ratchet wheel is revolved by means of a thumb dog passing through the back of the box, so as to drive forward one cap at every movement of the dog.

Claim.—First, the combination of the ratchet wheel with the endless belt and its forked stud *p*, when the whole is constructed and fitted for use, substantially as herein described.

Second, the combination of the endless belt with the guide *m* and cup *l*, when the whole is constructed and fitted for use, substantially as herein described.

No. 47,128.—Amos Rank, Salem, Ohio.—*Harvesters.*—April 4, 1865.—This invention relates to the manner of applying a "cut-off," in combination with a slatted, dropping platform, from which the grain is discharged, when the platform is dropped by means of the stubble passing between the slats and holding the grain, while the platform is withdrawn by the forward motion of the machine. The cut-off is for the purpose of preventing the grain from falling upon the platform during the operation of discharging the gavel therefrom, and is connected at each end with a rod or lever, which is pivoted, at a fixed point, to the side board of the platform, and extending beyond and back of the pivots; these rods pass through loops or eyes attached to the rear end of the dropping platform, in such manner that, when the platform is dropped, the guard or cut-off is thrown up to intercept the falling grain, and that said cut-off, when the gavel is discharged from the platform, will act as a counterpoise to assist in again elevating the platform to receive the falling grain.

Claim.—First, the combination of a hinged platform with a guard *g* and guard levers *h h*, when the rear ends of said levers are attached by a sliding connection to the platform, substantially as described.

Second, the connecting of the bail or guard *g* at a fixed point to the divider boards of a platform in such a manner that while the bail is always connected to the platform the bearing point *i* of the bail always remains the same, substantially as herein described.

Third, the arms *b b*, applied at the ends of the guard *g*, substantially as described.

No. 47,129.—John Rankin, New York, N. Y.—*Churn.*—April 4, 1865.—In this invention two screw dashers are arranged, the one over the other; the one feeding from the centre to each arm, and the other from each arm to the centre. These dashers are in combination with a blast of air thrown in by a fan.

Claim.—First, the use or employment of a blower for forcing a blast of air into the churn box, substantially as described, in combination with two screw dashers, arranged one above the other, and so as to create a circulation of the cream, all as and for the purposes herein before set forth.

Second, the employment, in combination, of two screw dashers, one above the other, when one feeds from the middle toward each end, and the other feeds from each end toward the middle.

Third, the employment of the internal and external gears *j i* and pinions *f g*, in combination with the friction rim disk *k* and friction pulley *m* of the blower shaft, the whole arranged and operating as specified.

No. 47,130.—Edwin Reynolds, Mansfield, Conn.—*Steam Boiler.*—April 4, 1865.—This invention consists in the division of the water-space of a boiler by a partition, when the subdivision most remote from the heating influence is connected by a passage or passages with the water-containing projection extending into the furnace chamber; the object being to create a circulation of the water in the boiler, which is produced by the greater amount of heat absorbed by the water in the outer compartment, which causes it to rise in the space above, and this action causes a downward flow through the internal water-space and to the pipe which leads to the water-containing projections. The outer surface of these projections being exposed to the heat of the furnace, and communicating with the water-space of the boiler, allows a free circulation through them also.

Claim.—The arrangement and construction of a boiler, substantially as described.

No. 47,131.—F. W. Ritterhoff, C. A. Colquitt, and William Mulchahey, New York, N. Y.—*Machine for Cutting Tobacco.*—April 4, 1865.—This invention consists in operating the feed roller by means of a slotted, adjustable disk; this disk is adjusted so as to be more or less eccentric, and thus operates the feed roller more or less rapidly.

Claim.—The slotted, adjustable disk L, in combination with the lever K, ratchet wheel J, screw rod I, and follower H, constructed and operating substantially as and for the purpose described.

No. 47,132.—Louis S. Robbins, New York, N. Y.—*Process for Preserving Wood.*—April 4, 1865.—This invention consists in first removing the surface moisture of the wood, and then saturating it with oleaginous vapors. The wood is placed in the chambers, which are connected with a retort by means of a pipe; the retort is filled with coal tar, &c., and upon applying heat to the retort the oleaginous vapors generated pass into the chambers and expel the surface moisture from the wood and saturate the pores.

Claim.—The process herein described for preserving wood from mould and decay, the same consisting in first removing the surface moisture from the wood and then charging and saturating the same with hot oleaginous vapors and compounds, substantially as herein described.

Also, removing the surface moisture from wood by means of hot oleaginous vapors, substantially as herein described.

No. 47,133.—JOHN B. ROOT, New York, N. Y.—*Oil Well Pump.*—April 4, 1865.—The object of this invention is to exhaust the gases in petroleum wells, which interfere with the successful operation of pump valves, when the well is tubed in the usual manner, and in applying an additional tube and seed bag, in combination with each other, whereby the oil tube and oil pump may be removed from the well without disturbing the seed bag. Its novelty consists in an additional tube, arranged and applied in combination with the oil pump tube and the exhausting pump with the seed bag, so as to provide for the exhaustion of the gases and the exclusion of water from the lower part of the well. A tube, surrounding and connected with the upper part of the oil tube, is applied within the well, so that the oil tube and oil pump may be removed without removing or interfering with the seed bag.

Claim.—First, the employment in an oil well of an additional tube, so arranged and applied, in combination with the oil tube and an exhausting pump, that, while it permits the exclusion of water from the lower part of the well by means of the seed bag, it provides for the escape of the gases from the well, substantially as herein described.

Second, the arrangement of the tube C, surrounding and connected with the upper part of the well, substantially as herein described, whereby the oil tube and oil pump may be removed without disturbing the seed bag.

No. 47,134.—SARAH E. SAUL, New York, N. Y.—*Churn.*—April 4, 1865.—This invention consists in providing a churn with a cover sliding in grooves, said cover being in two parts and fitting close around the dasher shaft, in connexion with a hand-rest attached to the crank of the dasher shaft.

Claim.—The laterally-sliding covers C C in combination with the dasher shaft, as and for the purpose herein shown and described.

Also, the hand rest F, in combination with the crank E, substantially as and for the purpose herein shown and described.

No. 47,135.—CHANDLER SEVER, Boston, Mass.—*Clasps for Clothing.*—April 4, 1865.—In this invention two disks are connected by a hinge. The inner disk, being perforated, is sewed to the garment. Upon its upper face a stud stands opposite the hinge to enter an eyelet in the part of the garment to be held. The outer disk being now closed upon this, keeps the stud and eyelet in union.

Claim.—Improved clothes fastener attachment, the same consisting of the plates *a* and *d* and the stud *f*, they being constructed and to operate in connection with an eyelet or hole in the outer lap of the garment, substantially in the manner as herein before explained.

No. 47,136.—S. B. SEXTON, Baltimore, Md.—*Base-burning Stove.*—April 4, 1865.—In this invention the supply cylinder is a chamber surrounding the feed opening, in the bottom of which are apertures controlled by a damper. The products of combustion can thus flow into this chamber and directly to the exit pipe, or be directed from the top of the chamber, about the fuel cylinder, by pipes at the side of the stove, down to the chamber about the ashpit, and thence to the exit pipe. There are sliding mica doors in front of the stove. By putting a grate in the bottom of the supply cylinder a fire may be made there when desired instead of in the usual fire chamber.

Claim.—First, a base-burning stove, which is so constructed that the gas which is generated in the coal supply cylinder C can be conducted off through the top plate of said cylinder and around the feed opening at pleasure, substantially as herein described.

Second, a chamber D, with a valvular bottom and escape pipe *d* arranged over the coal supply cylinder or magazine of a base-burning stove, substantially as described.

Third, the draft flues *c c*, when carried out of the top of the chamber B and conducted into a chamber *a* having an ascending flue leading out of it, substantially as described.

Fourth, the combination in a base-burning stove of the projecting ledge *h* formed on the lower edge of the opening through case F and a flanch *i* projecting from the base rim of the cylinder surrounding the chamber B, substantially as described.

Fifth, the application of a supplemental grate S to the magazine of a base-burning stove, substantially as described.

No. 47,137.—JAMES SUTHERLAND, New York, N. Y.—*Manufacture of Propellers.*—April 4, 1865.—This invention consists in forging the wheel of wrought-iron in two parts, each of which forms two opposite blades on one-half the hub connecting them. These two halves of the hub are then interlocked with the arms of one at right angles with those of the other, and secured together by stout rings or bands shrunk upon and around each end of the hub.

Claim.—Constructing a propeller out of two parts by forming the hub of each part substantially as herein shown and described and fitting the two parts together, as and for the purposes set forth.

No. 47,138.—J. H. THOMAS and P. P. MAST, Springfield, Ohio.—*Machine for Distributing Fertilizers.*—April 4, 1865.—In this invention the stirrers are pivoted to a bar running lengthwise over the top of the hopper, and, after passing through a slot in its bottom, are united upon a horizontal swinging bar underneath. The width of the slot is varied by adjustable metal plates. The stirrers are provided with short arms extending horizontally.

Claim.—First, the slats or strips C suspended from the bar B and projecting through the opening in the bottom of the hopper A, when connected at the bottom by bar *d*, substantially as and for the purposes set forth.

Second, the shafts C provided with the projections *a* and *e*, as and for the purposes described.

Third, the slats C, as arranged in combination with the bar D and bottom pieces F and F′, as and for the purpose set forth.

No. 47,139.—William Thomas, Ottowa, Ill.—*Device for Raising and Lowering Lock Gates.*—April 4, 1865.—This invention consists in an arrangement of devices designated in the claim for hoisting the lock gates of canals, whereby heavy gates can be easily raised by the application of much less power than is usually required.

Claim.—The combination of the block and tackle, the roller levers, ratchet wheels, the pawls, the springs, and frame of the machine, being operated and used as herein before set forth for the uses and purposes set forth.

No. 47,140.—John Thurmon, Pike county, Mo.—*Medical Compound.*—April 4, 1865.—This invention consists of a compound made by distilling, in pure water, sarsaparilla, one part; running brier root, one part; poke root, one part; cherry tree bark, one-half part; blood root, one-half part; and mullen root, one-half part.

Claim.—The medical compound prepared as described.

No. 47,141.—S. F. Van Choate, New York, N. Y.—*Insulator for Telegraph.*—April 4, 1865.—A hook, intended for the support of a telegraph wire, is insulated in a wooden pin which is fastened to a telegraph post. A deep and narrow cavity, opening on the under side of the pin, runs up into it at various angles, being also provided with sundry grooves. In the top of this cavity the hook is secured. The effect of the smallness and crookedness of the cavity with its grooves is to render difficult, or nearly impossible, the deposition of moisture from the atmosphere around the base of the hook, and the consequent diversion of elective current which is very likely to take place when moisture is so deposited.

Claim.—First, the combination of the cavity A, face plate D, and pin hook C, for the purposes set forth.

Second, the wooden bracket B, plate D, and hook C, as above combined, when coated with the composition as above and for the purposes set forth.

No. 47,142.—N. E. Warren, Cleveland, Ohio, and G. W. Warren, Hillsdale, Mich.—*Addressing Machine.*—April 4, 1865.—This invention is intended principally for addressing newspapers. It consists of an adjustable head applied to a curved arm operating as a platen worked by a treadle, &c.

Claim.—First, the curved lever C C′, operated by the bent spring G, in combination with the adjustable head D, when arranged and operating as herein set forth.

Second, the pall F′, rock-shaft L′, slotted arm L″, and adjustable rod J, in combination with the quod ratchet I, operating as specified.

Third, the adjustable head D with the faces *d d′*, arranged and operated as and for the purposes specified.

No 47,143.—True West, Roxbury, Mass.—*Railway Carriage.*—April 4, 1865.—This invention consists in the arrangement of four struts, four pendulous rods, and two semi-elliptical springs, disposed on each side of the truck frame, with such frame and the axle boxes thereof, and the platform of the carriage body, the purpose of said arrangement being not only to support the platform at points between as well as outside the axle boxes, but to accomplish the same so as not only to allow a lateral sway of the platform, irrespective of the springs, but so to distribute the pressure of the springs on the axle boxes as to prevent any tendency of such pressure to curve the truck frame.

Claim.—The combination and arrangement of the four struts E E E E, the four pendulous rods or hangers F F F F, and the two semi-elliptic springs G G, disposed on each side of the truck frame B, with the said frame, the axle boxes C C thereof, and the platform or carriage body A, the whole being substantially as represented in figure 1 of the drawings, as hereinbefore explained.

No. 47,144.—Lorenzo Wesson, Chillicothe, Ohio.—*Electro-magnetic Musical Instruments.*—April 4, 1865.—This invention consists in the employment of a series of block types arranged upon a slide, so that in pressing under springs the types establish galvanic circuits with electro-magnets, which, by means of lever armatures, operate upon the keys of musical instruments. The extent of the type surface passing under the spring determines the duration of the note. For increasing the sound a second battery is brought into play.

Claim.—First, an electro-magnetic apparatus for playing music with variable power or expression, by automatically varying the battery power exerted on the magnets to accord with the number of magnets in use or with the strength of sound required, in any manner, substantially as set forth.

Second, a music board B, provided with independent movable type, acting upon or constituting circuit breakers or circuit closers, to regulate or govern the tone, power, or length of sounds produced by means of electro-magnetism.

Third, the key board C, connected with a series of magnets, and constructed substantially as set forth, with two or more circuits, by which any of the said magnets may be put in action at will.

Fourth, in combination with the key board C and series of magnets, the levers G, plates I, and wires J, all arranged as described and adapted to operate substantially as and for the purpose set forth.

Fifth, in combination with the electro-magnets E E′ E2, music board B, and additonal battery F′, the lever G′, operating substantially as described, to open communication between the additional battery and magnets when required.

No. 47,145.—Henry P. Westcott, Seneca Falls, N. Y.—*Churn.*—April 4, 1865.—This invention consists in the arrangement of bellows or blowers arranged on top of the cream chamber, and operated by the dasher shaft in such a manner as to cause a blast of air to penetrate numerous holes in the top of the cream chamber, and enter into the mass of cream while being agitated by the dashers; and also in an arrangement for assisting the operation of the dashers, consisting of a spiral spring arranged on an arc in such a manner as to exert a constant tendency to vibrate the hand lever upward when the latter is depressed; and, further, in the adjustability of the dasher and the form of the same, so as to adapt it to either a greater or less quantity of cream in the chamber.

Claim.—First, the employment, in combination with the arm E, lever D, and arc *g* of a spring *f*, substantially as and for the purpose set forth.

Second, the use of a bellows B, or its equivalent, in combination with the receiver and dasher shaft, in the manner and for the purpose substantially as set forth.

Third, making the dasher adjustable, substantially as and for the purpose set forth.

Fourth, the peculiar form of upper dash shown and described, for the specific purposes set forth.

No. 47,146.—Joseph F. White, Keene, N. H.—*Pump.*—April 4, 1865.—In this invention a vertical cylinder is submerged, and a hollow rod is pivoted centrally at the bottom and ascends to the desired place of delivery. Fitting snugly within the cylinder are hollow wings with side openings and interior valves. Abutments of like construction are attached to the interior of the cylinder. A reciprocal horizontal motion being imparted to the hollow rod, the water enters its submerged wings and ascends through the tubular rod.

Claim.—The combination, in a double-acting pump, of a valve chest W, provided with triangular valve chambers A, with a rotating pump tube, carrying hollow radial arms E which have partial rotary motion in horizontal directions, and are provided with double-acting valves, substantially as above described.

No. 47,147.—William H. Whitmore, Boston, Mass.—*Apparatus for Dividing Sugar in Blocks.*—April 4, 1865.—In this invention are used circular saws. The improvement consists in combining with the saws certain wheels as rotary separators.

Claim.—The combination of the conduit, one or more saws, and the separators, arranged substantially in manner and so as to operate as specified.

No. 47,148.—George L. Witsel and Edward Burke, Philadelphia, Penn.—*Oil Ejector.*—April 4, 1865.—This invention consists in the combination of a compressing and lifting pump with the pipe of an oil well in such a manner that the air from a compressing pump is carried down to the lower end of the eduction pipe in a passage separated from it, and is caused to ascend through that pipe under great pressure, carrying with it a column of oil. This column will be raised as high as the pressure of the air is capable of carrying it. The ordinary pump is attached to the same eduction pipe, and is operated by the same machinery, and in the event of a want of sufficient force in the ascending column of air to force the oil to the surface, this pump aids in the operation by forming a partial vacuum, and thus enables the oil to reach the required height.

Claim.—First, the combination of condensing and exhausting pumps in conjunction with induction and eduction pipes, arranged within an oil well, substantially as and for the purposes described.

Second, connecting both the exhausting engines to a lever which receives a rapid vibrating motion, substantially as and for the purposes described.

No. 47,149.—Orville O. Woodruff, Killingworth, Conn.—*Bow Pin for Ox Yoke.*—April 4, 1865.—This invention consists in constructing two latches, placed upon the upper side of the yoke, so that when the bow is passed through the yoke the latches will spring into the pin-holes of the bow and securely hold the same in place until the latches are withdrawn.

Claim.—The combination of the two levers A A, constructed with pins D D, substantially as and so as to operate in the manner and for the purpose specified.

No. 47,150.—WILLIAM C. AMES, Hartford, Conn., assignor to LANDERS & SMITH MANUFACTURING COMPANY, New Britain, Conn.—*Window Cord Pulley.*—April 4, 1865.—This invention relates to that portion of a window sheave which is called the case. The object of the invention is to reduce the cost of the article itself in its manufacture, and to lessen the amount of labor required in fitting it into the jamb of a window for use.

Claim.—As a new and improved article of manufacture, viz: a window or sash-cord pulley case, having the face plate *a* midway, or nearly so, of the case *a*, to be attached to the back side of the jamb casing of the window frame, substantially as described.

No. 47,151.—JOHN CONNER, assignor to himself and HENRY A. AYLING, Boston, Mass.—*Mode of Weaving Fabrics with Button-holes therein.*—April 4, 1865.—A portion of the dents of the reed have inclined projections thereon, the said projections extending forward the length of the button-holes. The reed is given a positive upward motion while weaving the other side, to allow this incline to adapt itself to the gradually increasing web as woven; during which downward motion the take-up is stopped until the last side of the button-hole is finished, when the weaving across the whole warp is resumed and the take-up again applied. The reed may have a double incline.

Claim.—The improvement in weaving suspender webbing, &c., to form button or other similar holes therein, by the employment of a reed having a construction, and operating in the manner substantially as set forth.

No. 47,152.—JOSEE JOHNSON, New York, N. Y., assignor to JOHN WARD, jr., Brooklyn, N. Y.—*Mangle.*—April 4, 1865; antedated March 30, 1865.—This invention consists in a certain combination and arrangement of longitudinal springs and connections with the rollers, which are adjusted by a screw.

Claim.—The combination and arrangement of the screw Q, the spring O, and the links N, with the rollers B′ and B, and the frame A, substantially as and for the purpose set forth.

No. 47,153.—GRIFFITH M. MURPHY, assignor to LYMAN S. PAINE, Lewisburg, Penn.—*Seed Drill.*—April 4, 1865.—In this invention an adjustable spring is placed between the drag bar and the lever which holds the tooth in position. This spring, being adjusted nearer to or further from the fulcrum, governs or controls the amount of pressure that is required to draw back the tooth.

Claim.—First, a sliding or transferable spring *g*, whereby the power required to throw the drill tube out of working position may, at the will of the operator, be increased or diminished, substantially as described.

Second, the arrangement of the lever C, entirely above the drag bar A, substantially as described.

Third, the combination of the drill tooth B, drag bar A, lever C, and spring C, substantially as described.

No. 47,154.—FRANCIS B. MORSE, New Haven, Conn., assignor to FREDERIC C. DAYTON, jr.—*Shaft Coupling for Carriage.*—April 4, 1865.—This invention consists in making the stationary part of the coupling or joint with two eyes and a cavity opening forward or towards the heads or movable part of the coupling; the said cavity is filled with India-rubber, or any other elastic substance, to press against the movable part of the joint so as to obviate all rattling.

Claim.—As a new article of manufacture, a shaft coupling, composed of a jack or stationary part, forged with two eyes and a cavity for retaining an elastic presser, an elastic presser, and a plain head with one eye, when constructed, combined, and fitted for use, substantially as herein described.

No. 47,155.—DATUS E. RUGG, New York, N. Y., assignor to himself, F. S. OTIS, JOSEPH I. and J. O. WEST, JEDEDIAH WILCO & CO., and HENRY RICHARDSON.—*Forming Skeleton Skirt.*—April 4, 1865.—This invention consists of a frame of wood of such shape that when the steel hoops destined to form a skeleton skirt are placed upon it, the proper shape will be given them, and they will also be in a convenient position for the attachment of the galloons or ribbons which connect them. This frame is also provided with a block upon which to place the waistband of the skirt.

Claim.—The method herein specified of shaping or forming ladies' skeleton skirts by sustaining the hoops in the proper position, relatively, while being connected together by tapes, galloons, or their equivalents, for the purposes specified.

No. 47,156.—SIGNOR VALLO, assignor to himself and JOSEPH CHAPMAN, Philadelphia, Penn.—*Railway Car.*—April 4, 1865.—This invention consists in the combination and arrangement with a car or truck, of foot pieces for removing persons off the track of a passenger railway without permanent injury, such as would be sustained by the wheels running over them, in such manner as to preserve a uniform proximity of the said foot pieces to the rails at all times. It also consists in a peculiar construction and arrangement of the said foot pieces, by which they are kept free from the guard rails while turning curves.

Claim.—First, connecting the foot pieces E E E E with the springs J by means of the

legs F F F F, bars G G, and spring seats H H H H, substantially in the manner and for the purpose above described.

Second, combining the spring seats H H H H with the bars G G by means of the pins *e e e e* on the inner edges of the said seats, and corresponding holes in the bars G G.

Third, the combination and arrangement of the foot pieces E E E E with the legs F F F F by means of the hinges *a* and springs *a'*, substantially in the manner and for the purpose above described.

Fourth, combining the rods M M with the foot pieces E E E E and guards L L to prevent the said foot pieces swinging forward by the motion of the cars, and also to allow them to be borne against the wheels at the proper time, substantially in the manner described and for the purpose set forth.

No. 47,157.—ALBERT M. WHITE, assignor to himself and BARNARD LARVEY, Port Chester, N. Y.—*Brush.*—April 4, 1865.—This invention consists in fastening in the brush each tuft or bunch of bristles independently by a staple-like wire.

Claim.—The mode of securing the several bunches of bristles in the solid back of a brush by means of separate staple-like wires C, applied substantially as herein described.

No. 47,158.—CHARLES A. WOOD, Dorchester, Mass., assignor to DANIEL C. HOOD, of the same place, and W. H. S. JORDAN, West Roxbury, Mass.—*Apparatus for Concentrating Liquids.*—April 4, 1865.—This invention consists of a vacuum pan made of iron and lined with enamel. It is surrounded with a steam jacket, made of wood or other non-conducting material. The said pan is provided with a dome, also lined with enamel, the joint between the dome and the pan being rendered air-tight by means of the elastic packing. A pipe leads from the dome to the cylinder, the said pipe being lined with enamel to the point. From the cylinder H a pipe descends to the cylinder K, said pipe being provided with a stop-cock. The dome is provided with peep-holes and a thermometer.

Claim.—As an improvement in vacuum pans, the pan A, in combination with a steam jacket D, of wood or other non-conducting material, operating substantially as set forth for the purpose specified.

Also, an elastic packing for the joints of vacuum pans, operating substantially as described.

Also, the within-described apparatus for conducting liquids, consisting essentially of the pan A with its jacket D, packing *i*, and dome C, and the condenser H I, the whole combined and operating substantially as set forth.

No. 47,159.—CHARLES E. WOODMAN and CHARLES B. HATFIELD, assignor to CHARLES E. WOODMAN, Boston, Mass.—*Buckle.*—April 4, 1865.—This invention consists in the combination of a holding bar and a straight-edged tongue with the bar, the overlapping tongue, and a buckle frame. A compound and double tongue and bar is combined with the overlapping bar and the buckle frame.

Claim.—The combination and arrangement of the holding bar *b* and the straight-edged tongue C with the bar *a*, the overlapping tongue B, and the buckle frame A.

Also, the combination and arrangement of the compound or double tongue C and the bar *b* with the overlapping tongue B and the buckle frame.

Also, the combination and arrangement of the compound or double tongue C, the bar *b*, or its equivalent, the bar *d*, and the frame A.

Also, the combination and arrangement of the cross bar *d* with a single tongue and an overlapping tongue and the buckle frame.

Also, the construction of the overlapping tongue with a slot, or its equivalent, arranged within it, substantially in manner and for the purpose set forth.

Also, the combination of the connections *e e* with the two cross bars *a b* and the tongue B applied to them, the said bars and the buckle frame, as specified.

No. 47,160.—ALEXANDER A. CROLL, London, England.—*Preparation of Materials to be used in the Purification of Gas.*—April 4, 1865.—This invention consists in combining neutral salts, or salts as nearly neutral as convenient, with wood, sawdust, or other cellular matter, such salts being in a concentrated form obtained by evaporation at a high temperature, the combination with other matters being effected while the salt is at such high temperature. The salts generally employed are the sulphate of alumina, the chloride or sulphate of zinc, the chloride or sulphate of manganese, or the chloride or sulphate of iron. The preparation above described may be used for purifying gas or as a disinfectant.

Claim.—First, the combining the neutral salts referred to, or as nearly neutral as convenient, with wood, sawdust, or other slightly absorbent or cellular matter, in the manner stated, and in employing such mixture in the purifying apparatus for the purification of gas, substantially as described.

Second, the use or application of the chloride or sulphate of manganese referred to with charcoal or wood sawdust, as a disinfectant.

No. 47,161.—Frans Gustavus Bielefield, Berlin, Prussia, and Charles C. E. Schwartz, Hamburg.—*Cork Pull.*—April 4, 1865.—This invention consists of a flat spring formed in a loop, the ends being secured to a rod and handle; at the centre or bottom of the loop is attached a button with a flat face, on which the cork rests when it is being drawn. The loop or spring is compressed as it enters or returns from the neck of the bottle.

Claim.—The combination of the rod B, the metallic spring C, and the button D, substantially as and for the purpose specified.

No. 47,162.—Frederick Ludewig Hahn Danchell, London, Eng.—*Drying and Charring Peat.*—April 4, 1865.—This invention consists in drying the peat by carrying it through a chamber on endless bands, the barrels being so arranged that the peat turns over as it falls from one band to another. A current of air is kept constantly flowing through the chamber, entering by the flues and afterwards escaping. The peat is charred in a retort which is provided with a pipe through which heated gases are admitted to the bottom of the retort. A pipe communicates with a refrigerator, the latter also communicating with a chimney by means of a pipe. A partial vacuum is created by means of a jet of steam from the pipe.

Claim.—First, the improved arrangement of the apparatus for drying blocks of peat, as shown and described in reference to sheet 1, and particularly the arrangement of the endless bands and rollers, by which the blocks are turned over in passing from one set to another.

Second, the arrangement and distribution of the air passages of the apparatus for drying peat.

Lastly, the application of a steam blast for producing the requisite currents of air for drying and charring peat or other carbonaceous substances.

No. 47,163.—Cyprien Chabot, Philadelphia, Pa.—*Breech-loading Fire Arms.*—April 4, 1865.—This arm belongs to that class of breech-loaders in which a hinged breech-block is raised and folds forward upon the barrel; and the improvement consists in a particular form of thumb lever and latch attached to the hinged breech-block, and operating a spring bolt in the stock, and also in a toothed segment and rack-cartridge retractor moved by the swinging breech-block. The devices are mainly designed to facilitate the conversion of the ordinary muzzle loading arms to breech-loaders.

Claim.—In combination with the hinged breech-block swinging upward and forward the lever H and its latch hung thereto, but so as to have a degree of motion independent thereof, and the spring bolt *e* for the purpose of locking the breech block when down, and for unlocking it by the same motion that raises up again, as herein described and represented.

No. 47,164.—Jasper G. Codmus, Port Richmond, N. Y.—*Windlass for Tightening Ships' Standing Rigging.*—April 4, 1865.—A frame is suspended by means of an eye from the rope or shroud to be tightened. To this frame is fitted a winch barrel provided with a handspike socket and pawl; the frame has also a pawl of its own, the whole operating in such manner that the rope from which the frame is suspended by a rotation of the pawls may be drawn from opposite ends together and thus tightened.

Claim.—The frame *d*, suspended by the eye *e*, from the rope or shroud to be tightened, in combination with the winch barrel *f*, and a handspike or lever to turn said winch barrel, as and for the purposes specified.

No. 47,165.—James H. Concklin, Yorktown, N. Y.—*Platform Scales.*—April 4, 1865.—The object of this invention is to enable the outer end of the beam to be raised at the same time that the inner end is elevated, thus preserving the beam in a horizontal position.

Claim.—The combination of the lever A, with the other parts C and F of a scale, in the manner and for the purpose substantially as set forth.

No. 47,166.—W. M. Davie and Charles T. Webber, Janesville, Wis.—*Steam-pressure Indicator.*—April 4, 1865.—This invention consists of a scroll spring, cylindrical box, a shaft, chain, and pulley, with a rod for connecting them with a safety-valve lever in such a way that the pressure exerted upon the safety-valve is communicated through the pulley and shaft to the scroll spring, which resists it, and which gives motion to the index-hand.

Claim.—The arrangement of the scroll spring *e*, the cylindrical box or chest *a*, shaft *c*, pulley I, chain K, connecting rod *d*, cross-bar *f*, and hand wheel *g*, substantially as and for the purposes set forth.

No. 47,167.—John H. Duck and Erwin S. Gould, Elgin, Ill.—*Washing Machine.*—April 4, 1865.—The machine is operated by means of a lever projecting from a perpendicular wheel. This wheel gears with a horizontal pinion on a perpendicular shaft which runs down into the churn through the cover, and is furnished at its lower end with four rubbers. The cogs on the aforesaid pinion are in shape longitudinal sections of cylinders, radially arranged. The rubbers stand out at an acute angle to the shaft and at right angles with each other.

Claim.—The pinion N, and wheel T, in combination with the shaft C, and rubbers O′ O′ O″ O″, constructed and operated substantially in the manner and for the purpose described.

No. 47,168.—Herman Haupt, Cambridge, Mass., and J. Y. Smith, Alexandria, Va.—*Mining and Tunnelling Machine.*—April 4, 1865.—The object of this invention is to reduce by the employment of machinery the time, labor, and expense attending certain mining operations, and consists in the combination and arrangement of mechanism designated in the claim.

Claim.—First, the pick or series of picks, in combination with a mechanism for imparting rotary motion thereto, to operate in the manner and for the purpose substantially as herein set forth.

Second, the method herein described of mounting the pick or picks upon bevel gear disks, bevel gear and driving pinion being at or near the circumference of said disks, as set forth.

Third, the bevel pointed picks, and the arrangement of the same upon the revolving disk, with the bevel faces alternatingly reversed, substantially as set forth.

Fourth, the method of hanging the rotary pick disks in a swinging frame so arranged in relation to the gear mechanism as that a translatory movement may be imparted to picks without interferring with their rotation.

Fifth, in combination with the swinging frame and rotary picks, the method herein described of adjusting or feeding the picks up to the work as the operation progresses, independently of the main frame of the apparatus, substantially as set forth.

Sixth, the combination with the rotary picks, held as described in a swinging frame, of a mechanism for laterally reciprocating the swinging frame, substantially as and for the purpose set forth.

Seventh, the stationary cutter in front of the swinging frame, under or between the rotary picks, for the purpose of removing the core of the ore or coal, substantially as set forth.

Eighth, locating within the swinging frame a shaft provided with pinions at either end thereof, and arranged in relation to the gear mechanism so as to receive from the prime mover and impart to the picks rotary movement, substantially as herein set forth.

No. 47,169.—William Henschen, Hennepin county, Minn.—*Beehives.*—April 4, 1865.—This hive is constructed of straw in continuous rolls, bound together by splints, of a quadrangular form, with frames at its top and bottom for the reception of boxes, &c.

Claim.—The arrangement in the construction of a straw beehive of a straw rope, or layers of rope, with the spints I, top frame C, and bottom frame D, substantially as and for the purposes herein described.

No. 47,170.—Ivon Bruce Miller and Wm. Hartley Miller, Philadelphia, Penn.—*Lubricating the Packing of Stuffing Boxes, &c.*—April 4, 1865.—This invention consists in using paraffine, either alone, or mixed with cotton, hemp, soapstone, and like substances, for lubricating packing boxes of steam-engines and other parts of machinery.

Claim.—First, the application of the substance, mode, and material, above described, to the stuffing boxes or other joints of engines, or other machinery, or any other substantially the same mode and material.

Second, the application of the above material to other materials used for the manufacture of packing, as cotton and hemp, saturated with it.

Third, the application of above material, or any other substantially the same, to the rod or stuffing box, or to the packing thereof, by using it through the cylinder of the engine, or any other application thereof, whereby the rod will carry the said material to the packing.

Fourth, the substance above described, as an adjunct to the various patent packings.

Fifth, the mode and material above described, or any other substantially the same, and that will produce the intended effect, as a cover or coating in place of muslin or other material for rope packing, as applicable in the packing made of powdered and fibrous substance, for instance.

Sixth, the above described material, as appplied to the packing of pistons of engines and pumps.

No. 47,171.—Louis Planer, New York, N. Y.—*Brading Guides for Sewing Machines.*—April 4, 1865.—In this invention the guide is attachable to the presser-foot of a sewing machine; the object is the increased facility of guiding the braid, especially in laying it in curved directions on the cloth; also the concave form of the groove, in connection with the pressure of the spring on the braid, tending to keep the braid within the groove, and preventing its passing to one side thereof.

Claim.—First, providing the groove J with a concave bottom, and a spring L, to operate in the manner and for the purpose herein specified.

Second, the arrangement of the set screw M, with spring L, for regulating the pressure of the spring upon the braid in passing under the bottom of the groove J, substantially as herein set forth.

No. 47,172.—David Ring, Damariscotta, Me.—*Ground Auger.*—April 4, 1865; antedated March 26, 1865.—In this invention two semicircular disks of steel are each furnished at the ends of their straight edges with cutters, one pointing upwards, the other downwards. The cutter is rendered expansible by means of slots in the disks, through which the confining screws are passed into the cutter-heads, at the bottom of the shaft. The bottom of the shaft is furnished with a gimlet-point to facilitate its entrance into the earth.

Claim.—First, the disks D and E, provided with the top and bottom cutters *h* and *j*, substantially as set forth and for the purpose described.

Second, rendering the borer expansible by means of the oblong slots *f*, substantially as described.

No. 47,173.—THOMAS S. SPEAKMAN, Camden, N. J.—*Lamp for Burning Oil.*—April 4, 1865.—This invention consists of two reservoirs, one for holding oil and one for water. From the bottom of the reservoir a tube extends to a short distance above the top. The wick-tube of the lower reservoir extends up through the tube. The water is carried up to the burner by means of the wick.

Claim.—First, the use, in combination with lamps for burning animal, vegetable, or mineral oils of fatty matters, of a wick, or its equivalent, for conveying to the flame a supply of water, substantially as and for the purpose herein set forth.

Second, the use of the heat of the flame for producing the aqueous vapor which is conveyed to the flame.

No. 47,174.—L. W. TURRELL, SAML. STANTON, and L. C. WARD, New York city.—*Oil Ejector.*—April 4, 1865.—This invention consists in inserting into the lower end of the air induction tube, a conical pipe, which forms the lower part of the air-tube through which the oil is raised. Into the lower end of this conical pipe a conical tube is placed and held in position by being secured to the outer pipe; through the centre of this tube a passage for the oil is made, and its external diameter is so much less than the internal diameter of the pipes in which it is placed as to leave an annular space around it for the air to enter. This annular space communicates with the outer pipes through which the air is forced down into the instrument. The annular current of air surrounding the mouth of the oil tube, and passing it with great velocity, causes a column of oil to ascend within the annular column of air, and eject it from the well.

Claim.—First, contrivance for raising oil, like that hereinbefore described, that is to say, one wherein the oil is drawn up through a central passage or tube, around which is an annular passage or tube, through which the compressed air is made to act upon the oil, substantially in the manner and for the purpose described.

Second, the manner of securing the internal tube F within the internal tube A, by means of the perforated disk E, and the coupling clamp C, substantially as described.

Third, the manner of securing the tube J in its position, by means of the disk K, and coupling clamp H, constructed and arranged substantially as described.

Fourth, the stuffing box L, in combination with an internal and external tube, arranged in the manner and for the purpose above described.

No. 47,175.—THOMAS WEAVER, Harrisburg, Penn.—*Writing Tablet.*—April 4, 1865.—A box, containing a roll of paper and an ink bottle, has a lid of sufficient width to receive a few lines of writing at a time. A hinged bar is fastened by elastic bands to the wrist of the person writing.

Claim.—First, the construction of a tablet attachment for the hand, that moves with it and under it, and presents a continuous writing surface under the pen or pencil, whose parts are so proportioned and arranged as to form, when folded, a pocket vade mecum.

Second, the combination and arrangement of the paper case M X′ N X, with the reels M N, their driver Q, the tablet leaf L A, its bearing O, its spring A; also with the digital leaf B K, its hinges K K′, its key-hole B, its stopper R′ for the ink bottom B′, situated in the hand side of paper case, substantially as and operating in the manner as herein described and set forth.

Third, the combination and joint operation of the metacarpal plates shown in figure 3, with each other, and with the digital leaf B K, and with the carpal plates shown in figures 2 and 6, by means of the slot F, the key-hole E, the concave-convex slots D D′, their sliding clamps 4 4, and the button H, substantially as and operating in the manner as herein set forth and described.

Fourth, the combination and arrangement of the carpal plate, shown in figure 2, with the metacarpal plate shown in figure 3, by the buttons T T′; also with the wrist, by the hinged locking bracelet shown in figure 9 and the wristband shown in figure 10, or with the plate shown in figure 6, which has the groove J, the pad P, the bands *a b*, eyelets 1 2 and 3, and buttons U U′, operating in the manner as and for the purposes herein set forth.

No. 47,176.—S. W. WETMORE, Erie, Penn.—*Movable Fire-place with Gridiron Attachment.*—April 4, 1865.—This invention consists in a movable upright fireplace, constructed with a closed back of sheet metal, the front being composed of vertical bars set in a movable frame, and the back plate being bent on top so as to form a device for conducting the draught up the chimney, operating somewhat as the throat of a chimney, the space between the back plate and the bars being closed on top by a hinged cover. This fire-place is intended to be placed in front of the door of a cooking stove or in front of an ordinary fire-place, and is provided with handles by which it can be moved. It is intended to use in conjunction with this fire-place, a vertical, revolving, folding gridiron, of ordinary construction, provided with

a dripping pan, and a device for retaining the gridiron in a vertical position; this gridiron is also provided with handles.

Claim.—The movable fire-place, constructed with narrow sides, to be placed in the nature of a false door, in the doorway of the cooking stove, and to be used in connection with the adjustable folding gridiron suspended before it.

No. 47,177.—HORATIO AMES, Falls Village, Conn.—*Manufacture of Ordnance.*—April 11, 1865.—This invention relates to several improvements in the method of constructing ordnance of separate sections, each section being made up of several concentric rings, for which a patent was granted to the said Ames on the 16th day of August, 1865, namely: Firstly, in forming the inner ring of the section by cutting it out of solid iron. Secondly, in constructing each section of rings of gradually diminished length from the bore outwards. Thirdly, in welding the section to the breech, or to the preceding section—the cannon meantime lying in a horizontal position—by means of two hammers working during the same heat, the one vertically and the other horizontally. Fourthly, in attaching the centring pin to a long bar having a handle at each end, for the greater convenience in handling the same and guiding and controlling the section.

Claim.—First, making the interior ring *a*, of a combined series, out of solid metal and without a weld, substantially as and for the purpose described.

Second, making the section of a series of concentric rings, of which the inner one is longer than the one outside of it, substantially as and for the purpose described.

Third, welding the sections to the mass during one and the same heat, by means of two hammers or rams, one working horizontally and the other vertically, substantially as described.

Fourth, combining with the centralizing or matching pin G the arms and handles *g h*, by which it is more readily operated, held, and withdrawn, substantially as described.

No. 47,178.—DANIEL R. ARNOLD, Haddam, Conn.—*Lazy Jack for Vessel's Sails.*—April 11, 1865.—In this invention the distinguishing feature of the lazy jack and what constitutes the improvement, is that the instrument in operating revolves and surrounds the boom, sail, and the gaff.

Claim.—A revolving lazy jack surrounding the boom, sail, and gaff, substantially as set forth and described.

No. 47,179.—WM. ARRONQUIER, Worcester, Mass.—*Staging for Buildings.*—April 11, 1865.—This invention consists in securing a portable apparatus to the rounds of a common ladder, capable of being easily raised, and upon which planking can be laid.

Claim.—The construction of the supporting bars and platform, and their combination with the ladder, forming a staging, as described.

No. 47,180.—J. W. BISHOP, New Haven, Conn.—*Boiler Feeder.*—April 11, 1865.—This invention consists in attaching a pipe to a boiler at about the proper waterline, which is made to extend up some distance above the top of the boiler, and to the top of which two vessels are attached, one within the other—the outer one communicating with the boiler, the inner one being filled with water or some other fluid. Above these two vessels, and connected with them, is a plate extending across the mouth of the vessels and to which a pipe is attached which extends down to the bottom of the inner vessel. Above this plate is a diaphragm to which a pipe is attached and through which the fluid is passed to the inner vessel. The upper end of this tube is attached to a lever which acts upon a belt shifter in such a manner that upon the water in the boiler falling below the mouth of the pipe which connects the vessels with the boiler, the steam enters the pipe and converts a portion of the water contained in the inner vessel into steam, which presses up the diaphragm, thus carrying up the tube and with it the lever which is attached to the belt shifter, and carries the belt from the loose to the tight pulley by which means the pump is put in operation through the shaft and crank, to which the pulleys are affixed. The pump continues to work until the water in the boiler rises above the mouth of the pipe above mentioned, when from the condensation of the steam in the vessel the pressure is relieved and the diaphragm falls to its original position, carrying with it the tube and lever and returning the belt to the loose pulley, when its motion ceases until it is necessary that the operation should be repeated.

Claim.—The combination of the vessels B and D, diaphragm *c* or its equivalent, with a steam boiler supplying pumps, when constructed and arranged to connect or disconnect the power operating said pump, as and for the purpose substantially as herein set forth.

No. 47,181.—J. W. BISHOP, New Haven, Conn.—*Automatic Boiler Feeder.*—April 11, 1865.—A tank to contain feed water is connected by two pipes, one at its top and the other at the bottom, with the boiler. A vessel containing water is situated between the boiler and the tank. Steam admitted to this vessel from the boiler generating steam therein which, pressing upon the water, causes it to rise, and, by means of a float and other mechanism, close the valves by which the steam was admitted to the vessel. At the same time the valve of the pipe which lets water into the tank is opened; water flowing through it is led into

the beforementioned intermediate vessel and condenses the steam therein, so that the water falls and reopens, by means of the before mentioned float and other mechanism, the valves which admit steam from the boiler into the tank. Steam thereupon enters the tank by the pipe at its top and also fills the pipe at the bottom, but the pressure both above and below being equal, the water in the tank flows by its own gravity into the boiler. As soon as the pipes are clear of water, steam, of course, fills them, and operates as above described.

Claim.—The combination of the vessels B and D, diaphragm *c* or its equivalent, with inlet and exit pipe C and M, constructed and arranged to operate a valve A, substantially as and for the purpose specified.

No. 47,182.—J. W. Bishop, New Haven, Conn.—*Steam Trap.*—April 11, 1865.—This invention consists in providing two vessels, one placed within the other, and of dimensions sufficiently less than the outer one, to leave considerable space between them for the admission of steam. Over the top of the inner vessel is placed a cap which has a pipe inserted in it, extending down nearly to the bottom of the vessel. Above this cap is a diaphragm to which a tube is attached, through which the fluid passes to the inner vessel, and over which a cover is placed. The tube above referred to extends up to, and bears against, the under side of a lever, to the outer end of which a rod is attached to operate the valve in the outlet pipe. Upon the admission of steam to the outer vessel through the induction pipe, and after the water of condensation has passed out through the outlet valve, the water in the inner vessel will be converted into steam, and the diaphragm pressed up, and with it the tube and lever which will close the valve, and prevent the escape of steam.

Claim.—The combination of the vessels B and D, diaphragm *c*, with a water tank or reservoir and steam boiler, constructed and arranged to operate the valves connected therewith, substantially as and for the purpose herein set forth.

No. 47,183.—J. W. Bishop, New Haven, Conn.—*Low-water Indicator.*—April 11, 1865.—This invention consists in attaching to a boiler a hollow metal vessel, by means of a pipe which communicates with both. Within the vessel above named, another one is placed in such a way as to leave a space around the inner one, which space is filled with steam from the boiler. The inner vessel is filled with water, and a cap placed over it, to which a pipe is secured, which extends down nearly to the bottom of the vessel. Above this cap is a diaphragm, and over this another cap is placed, having a tube which supports the frame of the diaphragm, whenever the water in the boiler falls below the mouth of the pipe which carries the steam to the interior of the outer vessel, the steam rushes in, and by its heat converts the water in the inner vessel into steam, which passes up through the pipe, and presses up the diaphragm, the stem of which raises a lever, which is attached to the valve of the whistle, opening said valve, and thus sounding the alarm.

Claim.—First, the combination of the two vessels B and D, arranged as described, with a diaphragm *c*, or its equivalent, in the manner and for the purpose substantially as herein set forth.

Second, the combination of the vessels B and D, diaphragm *c*, or its equivalent, with a steam boiler, when arranged to operate substantially as and for the purposes specified.

No. 47,184.—J. W. Bishop, New Haven, Conn.—*Water Regulator.*—April 11, 1865.—In this invention the flow upward through a vertical pipe is regulated by an auxiliary current passing around a seated valve, and pressing upward against a diaphragm, attached to the periphery of the hollow valve stem; by which means the area of pressure to uphold the valve is increased to any desired extent to overcome the pressure of the superincumbent water in the eduction pipe.

Claim.—First, the valve C, when constructed with a hollow stem, and combined with chambers F and G, substantially as and for the purpose herein set forth.

Second, adjusting the pressure of water in pipes by means of the chamber G, and cocks L and O, substantially as herein specified.

No. 47,185.—Daniel S. Brigham, Worcester, Mass.—*Skate.*—April 11, 1865.—This skate is fastened to the boot of the skater without any straps, by means of buttons as it were on the skate, which enter slots in plates affixed to the sole and heel of the boot. Above these slotted plates are cavities in the leather, large enough to permit the oblong buttons, after having entered the slots, to be turned at right angles thereto, so that they cannot slip out. This turning is effected by a lever on the skate, which, having gotten the buttons in the proper position, is clamped by a set screw so as to keep them so. The skate is simply a steel runner turned over at the ends, and by means of an adjusting screw the central part of the runner may be forced outward so as to produce a pivot on which short curves may be executed.

Claim.—First, in combination with the supporting plates A B, the clamp bolts E G, clamp lever H, and lock plates *h*, of the heel and sole substantially as and for the purpose described.

Second, providing one or both of the catch bolts E G with a pin which enters the leather of the sole or heel, to prevent any longitudinal motion of the skate, substantially as herein described.

Third, the application to a yielding or elastic runner of the adjusting screw L, for the purpose of making the bottom part of the runner flat or crowning, substantially in the manner described.

Fourth, the combination with the supporting plates A B, of the clamp bolts E G, clamp lever H, elastic runner D, and adjusting screw L, when constructed and operated substantially as and for the purposes described.

No. 47,186 —J. K. BUCK, Winona, Minn.—*Fanning Mill.*—April 11, 1865.—This invention consists in the construction of an elevator, so arranged that the belt of endless buckets is moved by the main driving wheel.

Claim.—The combination of the elevator B, shaft *e*, provided with the pulley *d* and wheel *b*, with the driving wheel *a*, when all the parts are arranged to operate as and for the purpose herein set forth.

No. 47,187.—JOHN BUSER, Philadelphia, Penn.—*Saw-set.*—April 11, 1865.—This invention consists in so shaping the jaws of a pair of nippers, in combination with a device hinged upon the joint of the nippers, as to give the proper inclination to the teeth in alternate directions.

Claim.—First, the pinchers A, with their jaws *bb'*, and cheeks *e e*, combined with the within-described devices, or their equivalent, substantially as and for the purpose specified.

Second, the plate C, its projection *d*, and arm *f*, in combination with the pinchers A, and springs *g g*, or their equivalents, the whole being constructed for joint operation, substantially as described.

Third, the adjustable plate *i*, combined with the plate C, substantially as and for the purposes set forth.

No. 47,188.—JACOB BUZBY, Philadelphia, Penn.—*Composition for Removing Scales from Boilers.*—April 11, 1865.—This invention consists of a decoction of the bark of the sweet gum tree, to which a proper quantity of gambier is added, the whole being heated until the gambeer is dissolved.

Claim.—The use for removing scales from steam boilers of a decoction of the bark of the sweet gum tree, in combination with a solution of gamber or catechu.

No. 47,189.—CHARLES M. CRESSON, Philadelphia, Pa.—*Gas Regulator.*—April 11, 1865.—This invention consists of a cylindrical casing, within which is another cylindrical casing, leaving an annular space between the two, which space contains water or other liquid. The inner cylinder is closed at the top with the exception of an opening for the reception of the valve, and another opening which communicates with the outlet pipe. The valve is suspended by a pin attached to the top of the holder which is made in the form of a hollow frustum of a cone, and has float attached to its lower end. From the top of the holder projects a pin for receiving a weight, and the holder is kept in a vertical position by means of guide rollers; the gas is admitted into the inner cylinder by means of a pipe.

Claim.—The use in a gas regulator of a holder of the tapering form herein described, for the purpose specified.

No. 47,190.—CALEB S. DAVIS, Lancaster, Pa.—*Machine for Spinning Flax.*—April 11, 1865.—The object of this invention is to prevent the slopping of water caused by the use of open troughs, so that the operator is enabled to piece broken rovings without inconvenience from the hot steam or water, however highly heated.

Claim.—First, the direct application of steam to the rovings in their passage through a chamber I.

Also, a chamber I, having a series of slots Y and caps U, with a steam pipe M, having perforations *z* opposite the slots Y within said chamber, together with valve L in combination with the connecting pipe *m'*, arranged and operating in the manner specified.

Also, a modified chamber I' with its slots Y enlarged, in combination with the disk or pulley X, lever W, and steam pipe M without perforations, constructed and operating in the manner and for the purpose specified.

No. 47,191.—E. M. DICKINSON, Fitchburg, Mass.—*Machine for Holding the Uppers of Boots and Shoes.*—April 11, 1865.—This invention consists of a forked clamp, one end being hinged, the other clasping about the rest, with two sets of springs underneath; and also in the same clamp, the springs and rest, in combination with a rod and spiral spring to raise or draw down said clamps.

Claim.—First, the forked clamp B, the springs *i i*, the yoke *j*, and the springs K K, or their equivalents, in combination with the rest A, as substantially described.

Second, the forked clamp B, the springs *i i*, the yoke *j*, and the springs K K, or their equivalents, the rest A, in combination with the rod *d* and the spiral *g*, or their equivalent, for the purpose herein set forth, reference being had to the accompanying specifications and drawings.

No. 47,192.—Hezekiah Dodge, Albany, N. Y.—*Press.*—April 11, 1865.—To the follower is attached a solid screw shaft which enters into a cylindrical nut with right and left threads. This cylindrical nut receives a reciprocating motion; its upper end receives a solid screw shaft secured rigidly to the uppermost beam of the frame. This shaft has its threads cut in a direction the reverse of that in which the threads on the follower screw are cut. When the cylindrical nut is rotated in one direction the follower screw with the follower is elevated, and when the cylindrical nut is rotated in the opposite direction the follower screw with the follower is depressed.

Claim.—First, the combination of the right and left hollow screw E, fixed screw G, and movable screw F, with the follower D, substantially as and for the purpose set forth.

Second, the stationary and movable right and left screw shafts F and G, hollow screw E, and spur wheel, C, with the driving spur wheel and shaft B B′, substantially as described.

No. 47,193.—Wm. Foster Dodge, New York, N. Y.—*Pump.*—April 11, 1865.—The cylinder cover, air chamber, and covers for the side pipes are cast all in one piece for the purpose of simplifying the construction. The piston rod and its stuffing box are situated in a tube which connects the air chamber with the cylinder cover. The follower or gland of the stuffing box is made so as to be withdrawn by the act of unscrewing the cap which confines it within the stuffing box, for the purpose of facilitating the removal of the follower when desired.

Claim.—First, the cylinder cover C, the air chamber D, and the covers for the two side pipes, when such parts are united with the cylinder A and side pipes by a single plane joint, substantially as described.

Second, in combination with the air chamber, arranged directly over the cylinder, and with the stuffing box on the top of the so arranged air chamber, the tube E surrounding the piston rod, connecting the top of the air chamber with the cylinder cover, and isolating the piston rod and stuffing box from the air chamber, substantially as and for the purpose herein specified.

No. 47,194.—Wm. H. Downing, Philadelphia, Pa.—*Apparatus for Withdrawing Tubes from Wells.*—April 11, 1865.—This invention consists of a pair of pivoted jaws having sharp edged projections, in combination with a pair of toggles for opening and closing said jaws, for the purpose of engaging with and bringing to the surface broken tools or tubing in oil-wells.

Claim.—First, the laws or arms A A having projections *a′ a′* and adapted to be opened or spread by the spring F and lever G, when lowered into the tubing of a well, for the purpose of taking hold of and raising the same, substantially as herein set forth.

Second, the combination of the toggles C C, yoke C′, and cord D, for contracting the jaws A A, when the apparatus is to be withdrawn from the tubing, as explained.

Third, the detachable cap E employed to retain the jaws A A in their closed position while the apparatus is being lowered into the tubing, substantially as described.

No. 47,195.—Mexworth D. Drake, Providence, R. I.—*Upper Bearings or Bolsters for Spindles of Spinning Frames.*—April 11, 1865.—This invention is designed as a self-lubricator; the upper annular chamber first receiving the oil whence it descends to and through the spiral groove into the lower annular chamber; when the spindle is set in motion the oil is caused to pass up the spiral groove towards the upper chamber, and thus diffuse itself generally throughout the whole length of the bore of the bolster.

Claim.—First, the use and employment of an upper and lower groove or oil chamber in the bore of the bolster, in combination with the use and employment of a spiral or helical groove, substantially as described.

Second, the use and employment of a spiral groove in the bore of the bolster, in combination with a groove *a* at the bottom, whether the top groove is used or not.

No. 47,196.—Spencer B. Driggs, New York, N. Y.—*Piano Fortes.*—April 11, 1865.—This invention consists in making a sounding chamber beneath an ordinary bottomless case, and in connecting the strings to the sound board by means of metal bearings on the bridge.

Claim.—First, the sounding chamber B provided under the case proper of the piano forte, substantially as and for the purpose herein specified.

Second, connecting each or any one of the strings with the sound-board bridge independently of the other strings by means of two metal bearings *t m* constructed or provided on or in one side of a stud *n* or *p* secured in the bridge, and having between them a lateral opening through which the string can be inserted in a lateral direction, substantially as herein described.

No. 47,197.—John Eby, Muncie, Ind.—*Wardrobe Bedstead.*—April 11, 1865.—This invention consists in the combination of a wardrobe with a bedstead, so arranged that it can be readily folded and unfolded and used for both purposes.

Claim.—The combination and arrangement of the posts A A C C and F F, bars B B and G, rails D and E E, doors H and K K, with the elevating board P and table T, the whole being constructed as described, for the purpose specified.

No. 47,198.—ALEXANDER H. EVERETT, New York, N. Y.—*Composition and Manufacture of Iron.*—April 11, 1865.—This invention consists in producing cast-iron possessing toughness and capable of taking a deep "chill," by using anthracite pig-iron, 80 parts; wrought-iron, 20 parts; oxide of manganese, 3 parts; oxide of iron, 3 to 5 parts; with a flux of fluor-spar or other fluoride, 2 or 3 parts. This combination of materials may be effected in either pot furnaces or in a reverberatory furnace when large masses are to be treated. The cast-iron is first melted and the refining materials then added, and the whole raised to a high temperature; the wrought-iron previously heated is then added.

Claim.—First, the combination of the cast-iron, wrought-iron, oxide of manganese, oxide of iron, and fluor-spar, or other fluoride, as and for the purposes set forth.

Second, the combination of cast-iron, magnetic iron ore, oxide of manganese, and fluor-spar or other fluoride, substantially as set forth and described.

Third, the process herein described for improving the qualities of cast-iron.

No. 47,199.—GEORGE W. FRANCIS and WILLIAM L. WOODS, Washington, D. C.—*Tobacco Pipe.*—April 11, 1865.—This invention consists of an ordinary pipe bowl which fits loosely in an outer casing made completely air tight except as to its upper end, where there are apertures to admit air; the bowl has a small nipple on its upper end which projects through the casing, and to which the stem is affixed; the lower part of the casing is closed by a cap of metal. In this pipe the fire is applied at the bottom of the bowl, and the tobacco is burnt upwards. If necessary, the casing may be made to enclose the bowl tightly, and no air space is left between them, in which case a series of grooves must be made on the surface of the bowl to admit of a circulation of air.

Claim.—First, the combination of case A, with its air holes F F, with the bowl B and its nipple D, the cap C, the grooves G, and air chamber *x*, substantially as described.

Second, the combination of the bowl B and cap C, with its air holes F, substantially as dsscribed.

The bowl B with its nipple D and cap C, when arranged and operating, substantially as described.

No. 47,200.—KINGSTON GODDARD, Philadelphia, Penn.—*Pumps.*—April 11, 1865.—In this invention the piston is lifted by a large cylinder within the main cylinder, which is so cut away along its course as to permit the flow of water around it; the alleged advantage consisting in the firmness of a cylindrical rod and the lightness obtained by the openings therein.

Claim.—The construction and arrangement of the tubular and perforated piston rod, substantially as described.

No. 47,201.—KINGSTON GODDARD, Philadelphia, Penn.—*Machine for Rolling Tea Leaves.*—April 11, 1865.—This invention consists in subjecting the tea leaves to the action of two rolling disks radially ribbed.

Claim.—The machine substantially as described, which submits the leaves to the rolling action of the two described rollers.

No. 47,202.—WILLIAM HANSFORD, San Francisco, Cal.—*Method of Preserving Eggs.*—April 11, 1865.—This invention consists in coating the eggs with glue by dipping them in liquid glue at a temperature that will not affect the egg. The eggs may be repeatedly dipped in order to increase the thickness of the coating; the eggs are then placed upon pins arranged in a board, and the glue allowed to dry.

Claim.—The coating of eggs with glue, substantially as and for the purposes herein recited.

No. 47,203.—DAVIS HARVEY, Jackson township, Iowa.—*Fence.*—April 11, 1865.—This invention consists in placing upon the top of a fence an inclined board of sufficient width to prevent dogs or wolves from gaining a foothold below. The body of the fence may be vertical or inclined

Claim.—Placing upon any common fence a panel or board projecting outward and upward for the purpose of preventing dogs and wolves from getting to sheep.

No. 47,204.—ISAAC HELLMAN, St. Louis, Mo.—*Tonic Bitters.*—April 11, 1865.—This invention consists of tonic bitters made from cologne spirits, sugar sirup, water, orange peel, mace, cinnamon, calamus root, cloves, galanza root, and anise.

Claim.—The combination of the several ingredients mentioned in the foregoing specification, in the proportions and for the purpose set forth.

No. 47,205.—PETER and FREDERICK HINKEL, New York, N. Y.—*Apparatus for Generating Carbonic Acid Gas.*—April 11, 1865.—This invention consists of a generator and washing vessel connected by means of a pipe. The generator is lined with lead, and both vessels are provided with apertures for filling. The jar which contains the marble is made of lead, and is perforated and provided with a long neck extending through an aperture in the top of the generator. A piece of rubber hose is attached to the top of the neck and also to the top of the generator to prevent the escape of gas. The neck is supported by a cross-

bar which slides freely up and down on wires. From the top of the washing vessel extends a pipe, one end of which terminates in a chamber which communicates with said washing vessel; by this means all water which may be driven through said pipe is returned to the washing vessel.

Claim.—First, the long-necked jar *l*, hose *r*, or their equivalents, and the air-tight connection between them and the cover of a gas generator A, as described, or its equivalent.

Second, the sliding bar *m*, the wires *w w*, or their equivalents, and the connection of them with jar *l*, hose *r*, and cover *k*, in the manner fully described, or its equivalent, and for the purpose set forth.

No. 47,206.—NELSON HOMES, Laona, N. Y.—*Wash Board.*—April 11, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—The wash board composed of the plane-edged slats or bars B B fitting closely together so as to prevent the leakage of water through, and having a necessary degree of elasticity; said slats being provided with corrugations *a a b b*, so arranged that the corrugations of any one slat alternate with the next, substantially as and for the purpose described.

No. 47,207.—THOMAS W. HOUCHIN, Morrisaina, N. Y.—*Instrument for Lighting Gas.*—April 11, 1865.—This invention consists in a curved tube enclosing a taper to light gas, so arranged as to protrude or retract the taper within the tube at the will of the operator.

Claim.—In combination with the tube A the use or employment of the wick or taper B, cord or string C and attachment D, when the frame shall be constructed and combined substantially as shown, for the purpose specified.

No. 47,208.—JOHN JOHNSTON, Alexandria, Va.—*Straightening Rails of Railroads.*—April 11, 1865.—This invention consists in the arrangement of a suite of three or more pairs of rolls, each pair being grooved to correspond in size and shape with the rail to be straightened. The rolls are so arranged that the grooves of the several pairs are perfectly in line, by means of which the rail, after having entered the groove of one pair, will be drawn through and made to enter successively the grooves of the second and third pairs.

Claim.—The use, for straightening rails, of three or more pairs of rollers having depressions and projections conforming to the shape of the rails, the rollers themselves as well as the said depressions and projections of the several pairs being arranged in respect to each other, as set forth.

No. 47,209.—JOHN K. LEMON, Allegheny City, Penn.—*Machine for Pressing Brick.*—April 11, 1865.—This invention consists in the use of a reciprocating follower in conjunction with a movable bed, the latter being actuated by means of a follower and a spring, so that the pressed bricks are forced out of the press box simultaneously with the retrocession of the follower, and brought into a position for being moved out of the way by a reciprocating follower, so arranged as to work in a plane at right angles to the plane of the pressing follower.

Claim.—First, a brick press which employs a pressing follower C and a movable supporting follower *b*, which are so combined and operated that the latter is allowed to descend by its own gravity during the introduction of a brick into the press box, and to rise during the retrocession of the pressing follower C, substantially as herein described.

Second, a spring *d* or its equivalent, for elevating the follower *b* in combination with the cross-head E and rods *f f* of the frame C′ for allowing the follower *b* to descend, substantially as described.

Third, providing for adjusting the followers C and *b* so as to work nearer to or farther from each other, according to the thicknesses of the bricks required, substantially as described.

Fourth, sustaining the follower *b*, when in an elevated position, upon a spring *d* or its equivalent, and when it is in a depressed position upon the bottom *i i* of the press box *a*, substantially as described.

Fifth, the combination of a reciprocating follower G and guides H H′ with the movable followers C and *b*, substantially as described.

Sixth, a movable separating board K, in combination with a brick press, in which the three followers C *b* and G are employed, substantially as described.

Seventh, the separator K, when used in conjunction with a follower G or its equivalent, and a removable shelf M, substantially as described.

Eighth, the parallel guides H H′, in combination with the movable followers C *b* and G, arranged and operating substantially as described.

No. 47,210.—JOSHUA O. LEWIS, Worcester, Mass.—*Clamps for Stretching Card Clothing upon Carding Cylinders.*—April 11, 1865.—This invention will be understood by reference to the claim and drawings.

Claim.—As a new article of manufacture a card clothing clamp constructed with forked braces to sustain and strengthen the ends of the clamp so that they cannot spring or yield, and with looped ends for the operating strap, all substantially as and for the purposes described.

No. 47,211.—Lewis W. Mason, Shelburne Falls, Mass.—*Carriages.*—April 11, 1865.—This invention consists in a peculiar arrangement of two sets of shafts and a cross bar with respect to two whiffletrees, whereby the cross bar is brought in rear of the draught animals when they are applied to the shafts, and such shafts become a substitute for a pole as ordinarily employed.

Claim.—A peculiar arrangement of two sets of shafts A B C D and a crossbar E with the whiffletrees F G, whereby the crossbar carrying the whiffletrees is brought in rear of the draught animals when they are between the shafts.

Also, the combination and arrangement of the connecter K and the two sets of shafts A D C D and the crossbar E.

Also, the combination and arrangement of the two mud guards L L with the two sets of shafts and their crossbar E.

No. 47,212.—John G. Leffingwell, Newark, N. J.—*Lantern.*—April 11, 1865.—The parts of this lantern are put together by means of rivets or eyelets instead of solder, as the latter is liable to melt. The lamp and the lantern are united by means of two hooks, one on the former and the other on the latter, and a spring so that they may be easily connected or disconnected. The burner is set in a cup instead of a collar. This cup is provided with two legs, one on each side, which have a slight spring, so that when the burner is set into the cup and turned slightly, the spindle of the ratchet wheel is forced under the lugs and holds them firmly.

Claim.—First, the lugs C when used in the manner and for the purposes specified, substantially as described.

Second, attaching the lamp to the lantern part by means of hooks or flanges represented working in combination with a spring, substantially as set forth.

Third, the lantern as it stands with its several devices, to wit, lugs, hooks or flanges, and spring fastening with rivets, reflectors, and posts, combined and arranged substantially as described.

No. 47,213.—Albert J. S. Molinard, Baltimore, Md.—*Packing Projectiles for Rifled Ordnance.*—April 11, 1865.—In the base of the projectile is a conical cavity whose axis coincides with that of the projectile. The base of the projectile is of the form of the frustum of a cone. In the base are openings leading to the interior conical cavity. In these openings and on and around the base of the projectile lead packing is cast in quantity such that its perimeter is equal to that of the head of the shot. The inclination of the aforesaid openings to the axis of the said conical cavity is about 60°, so that before the packing which fills these openings can be separated from the shot by the centrifugal force imparted to it by the spiral grooves into which it is forced, it must move faster than the shot, a thing which, of course, it cannot do.

Claim.—The inclination of the mortises or openings E connecting the conical hole in the base with the outer belt of metal or packing, in combination with the soft metal packing united to the shot as therein described, and the tapering of said packing to a thin feathered edge at or near the base of the shot that is raised by the gases acting simultaneously against the solid lead at the base and feather edge at the time of the discharge, for the purpose set forth.

No. 47,214.—William Morehouse, Buffalo, N. Y.—*Helve.*—April 11, 1865.—This invention consists in making upon each side of that part of the handle which fits into the eye of the axe longitudinal cavities, and in these concavities transverse sockets, so that the wedges after being exposed to the weather may swell into the said sockets, the wedges being made of soft wood and perfectly dry when driven.

Claim.—First, a helve or handle A constructed with sockets *e*, therein substantially as and for the purposes described.

Second, a helve or handle A constructed with a concavity *b*, therein substantially as and for the purpose described.

Third, so forming axe helves and other handles that when fastened in the eyes of implements by wedges of wood, the wedges will be allowed to expand and swell into recesses or sockets formed in the handles, substantially as and for the purpose described.

No. 47,215.—C. P. Morton, Chester, Pa.—*Alarm for Railroads.*—April 11, 1865.—This invention consists of an adjustable arm having elastic fingers, and so connected with a distant bridge that in opening the draw the said arms will be turned into such a position across the track that a passing train will necessarily impinge, rub, or rattle against said fingers so as to produce an alarm.

Claim.—The combination of the arm F, spring H, projections f' f^2, with the rod M and bell-crank L, so constructed and arranged as to operate in connection with the drawbridge C D in the manner and for the purpose herein described.

No. 47,216.—Joseph Newberger and Peter J. Illig, Buffalo, N. Y.—*Fruit Can.*—April 11, 1865.—This invention consists of a jar, the neck of which is formed tapering towards the top, the said neck being made with a recess to hold the packing. A cover provided with a rim is made to fit over the neck, and is held in position by the buttons.

Claim.—First, as a distinct article of manufacture a rim A, made of tin or other similar material, having a slightly tapering neck with a groove *a'* formed therein for receiving and holding a packing strip C, substantially as and for the purpose set forth.

Second, in making a cap or cover B to fit on to the taper neck of the rim, and having a flange *b* formed thereon in combination with a button D, for the purposes and substantially as described.

No. 47,217.—THEODORE A. NIXON, Philadelphia, Penn.—*Treating Straw to Obtain Paper Pulp.*—April 11, 1865.—In this invention the straw to be treated is first placed in a tank and covered with the waste liquor from the second treatment of the straw, next to be described. This tank is then heated by means of steam pipes, and is kept at the boiling point for about six hours. This liquor is then washed out. The second treatment is to place the warm straw from the first treatment in a boiler, with caustic soda of the strength of about 3½ alkolimeter heated to about 250° Fahrenheit. Steam is then introduced till the straw is pulped. The liquor is then drawn off and used for treating fresh straw, as first described.

Claim.—First, manufacturing paper pulp from straw by a process substantially as described.

Second, subjecting the prepared straw to the action of a hot solution of alkali prior to boiling the same, substantially as set forth for the purposes specified.

No. 47,218.—EDWIN A. PARKER, Horseheads, N. Y.—*Stove.*—April 11, 1865.—In this invention external air is led into a passage and thence into a heating chamber around the base of a stove, whence it can flow upwards, coming in contact with the fire pot, and through apertures in the outer casing about the fire pot into the room, or by flues and dampers the air can be introduced under the grate to aid combustion.

Claim.—The special arrangement for supplying the air drawn from the outside of the room, partly to supply the combustion, and partly to supply the room, the same consisting of the passage E, central heating chamber G, the induction pipe H, and the draught pipe I, operating substantially in the manner and for the purpose herein set forth.

47,219.—EDWARD J. PHILLIPS, Prescott, Wis.—*Churn.*—April 11, 1865.—This invention consists of a churn in which a vertical dasher is moved by a pitman connected to a disk rotating above it; the pitman is made to adjust nearer or more remote from the centre, thus varying the length of stroke.

Claim.—The crank wheel A, pitman B, and adjustable wrist I, in combination with the dasher C and guide pin D, the several parts being constructed, arranged, and operating as and for the purpose herein set forth.

No. 47,220.—WILLIAM QUINN, Philadelphia, Penn.—*Velocipede.*—April 11, 1865.—One of the forward wheels rotates with their axle and the other rotates independently of it to facilitate turning. Between the hind and forward axles are suspended two stirrups for the feet, the pendulous motion of which serves to impart a rotary motion to the hind wheels by means of rods connecting said stirrups and cranks on the rear axle. Between the two axles are also hand levers connected also with cranks on the rear axle for the propulsion of the machine.

Claim.—First, the combination of the two cranked axles G and G' with the connecting link *z*, with the bearing *c*, substantially for the purpose as described and shown.

Second, the construction of the fulcrum bearing N, the treadle levers when used in combination with the brace D, substantially as described and shown.

Third, the construction and arrangement of the frame as herein before set forth and described.

No. 47,221.—JOSIAH T. REED, Charlestown, Mass.—*Dyeing Kid Gloves.*—April 11, 1865.—This invention consists in stretching the glove, after it is cut out and sewed, upon a form and applying the dye to the outside with a suitable pencil or brush.

Claim.—As a new article of manufacture, a kid glove having the inside of the same color as the skin from which it was made, and the outside being colored of any desired shade after the glove is cut out and sewed, substantially as described.

Also, the art, method, or process of coloring kid gloves by applying with a brush or sponge the required dye or color to the exterior of the glove while it is stretched upon a suitable form or mould.

No. 47,222.—CHARLES ROBINSON, Springfield, Mass.—*Apparatus to Preserve and Exhibit Photographs.*—April 11, 1865.—This invention consists of a box containing two rollers to receive and discharge a band of pictures; a glass between the two admits of their being seen when turned by a knob reaching to the outside of the box.

Claim.—The combination of a continuous band G provided with means for mounting the photographs thereon, two cylinders B C, of sufficient diameter not to injuriously affect the appearance of the photographs by being bent around them, and an enclosing box or case A

provided with an aperture or apertures H H, through which the photographs are exhibited, substantially as and for the purposes herein specified.

Claim.—Also, the brake clamp shown in Fig. 4 for keeping the tangent portion of the connecting band or strip straight, as herein set forth.

No. 47,223.—HENRY W. SERGEANT, jr., Boston, Mass.—*Clothes Pin.*—April 11, 1865.—This invention consists of a clothes pin with three flexible prongs.

Claim.—Constructing a clothes pin with three flexible prongs, substantially as and for the purpose described.

No. 47,224.—JOHN B. ROOT, New York, N. Y.—*Pump for Oil Well.*—April 11, 1865.—This invention consists in the employment in an oil well of tubing composed of wooden staves surrounded by bands of metal; also in the arrangement of the pump cylinder in combination with the tubing of wood, whereby the said cylinder can be drawn up through the tubing without disturbing it by means of the piston rod.

Claim.—First, the employment in an oil well of tubing composed of wooden staves and surrounding bands of metal, substantially as herein specified.

Second, the arrangement of the pump cylinder in combination with the tubing of wood, substantially as herein specified, whereby the said cylinder can be drawn up through the tubing without disturbing it.

Third, the arrangement of the pump cylinder in the interior of the tubing of wood in an oil well, whereby the said cylinder and its piston may be withdrawn together from the said tubing by means of the piston rod, substantially as herein described.

No. 47,225.—CHARLES A. SAXE, Philadelphia, Penn.—*Machine for Boring Wells.*—April 11, 1865.—This invention consists in an arrangement of machinery by which the power that drives the machine may be continuous and in one direction, while the drill in connection with its rising and falling motion may have a downward feeding motion, and a rotary motion, or a rising, falling, and rotary, without the feed motion; and, in addition thereto, the facility of being raised up out of the hole to add a new section to the drill stock, or for repairs, while the power that operates the machine, as above stated, may run at a uniform speed always in the same direction.

Claim.—First, the combination of the drill frame and the frame that carries the double cam planes, both suspended to the screw nut and arranged to operate substantially as herein described and represented.

Also, in combination with a drill or boring tool that is raised and dropped, rotated, and fed up to the work, as herein described, the gear U and its stem or shaft, by which said feed motion may be increased, diminished, or suspended, as and for the purpose set forth.

Also, in combination with the raising and dropping, rotating and feeding mechanism, the gear V and its appliances for raising the drilling tool and its frame, and automatically stopping its action when the drill is up, and without stopping the first moving power, substantially as described.

No. 47,226.—S. FRANKLIN SHOONMAKER, New York, N. Y.—*Oil Ejectors.*—April 11, 1865.—This invention consists in providing a nozzle for the delivery of the air to the instrument in such a manner that the air will act upon the external and internal surface of the column of oil at one and the same time. The device for producing this result is composed of an annular vessel having an annular passage for the escape of the air from the induction pipe, and a central passage for the oil to pass up through, so as the air escapes from this passage the oil passes up on both sides.

Claim.—First, the use, in apparatus employed for the raising of liquids from great depths or to great heights, of an annular-shaped orifice or opening for producing an air blast in the same, said orifice being so arranged as to allow the liquid to be raised to come in contact with both the exterior and interior surfaces of the air blast, substantially as described and for the purpose specified.

Second, in combination with the nozzle *c c*, having an interior oil passage, the conical plug *n*, or its equivalent, arranged and operating substantially as and for the purpose specified.

Third, adjusting the height of the nozzle of the air pipe in the oil or liquid pipe, the same consisting in the use of the movable plate or ring *e e*, arranged and operating substantially as described.

No. 47,227.—S. FRANKLIN SHOONMAKER, New York, N. Y.—*Oil Ejectors.*—April 11, 1865.—This invention consists in the arrangement of a device for delivering the air from the end of the pipe, which conveys the same down to the ejector, and is composed of a series of small pipes attached to the end of the air pipe, and so placed as to form an annular passage for the oil which flows up in two columns, one outside of the column of air, and the other within the same. Directly above the outlet of the air pipe an inverted cone is placed for the purpose of deflecting the column of oil outward from the centre of the delivery pipe. From the interior of the oil pipe and projecting therefrom is an inverted cone, with a trun-

cated conical flange covering the mouth of the delivery of the air pipe, for the purpose of giving the proper direction to the air current.

Claim.—First, forming the delivery nozzle of an air-blast pipe in elevators for petroleum or other liquids, of a series of pipes of any desired number and size, with their delivery ends in the same horizontal plane, and having the form of a circle or any other suitable form, and so arranged as to give the oil in the oil tube and surrounding the air pipe a passage through which to communicate with and to approach the interior surface or surfaces of the air blast, substantially in the manner and for the purpose specified.

Second, the combination with the double truncated conical diaphragm *o p* of the adjustable cone *l*, arranged together substantially in the manner and for the purposes specified.

No. 47,228.—ABEL SHARLOW, Fort Lee, N. Y.—*Egg Boiler.*—April 11, 1865.—This invention consists of a cylindrical vessel of tin or sheet metal, having a concave bottom, over which is fitted a flat perforated disc, enclosing a small space between it and the concave bottom; the apparatus has a handle by which it can be lifted, said handle extending down the side of the vessel, and serving to steady it. There is a small measure attached to the handle, which contains just enough water to generate steam sufficient to cook the eggs, which are placed on the perforated disc or bottom; and the water is then poured into the space beneath said bottom, is evolved in the shape of steam, and rises up among the eggs, and cooks them. When the steam ceases to escape from a hole in the top, the eggs are known to be done.

Claim.—As a new article of manufacture the culinary vessel A, when constructed and operated substantially as described for the purpose set forth.

No. 47,229.—J. H. SNYDER, Killbuck, Ill.—*Ditching Machine.*—April 11, 1865.—This invention consists of a ditching machine, made to move upon a railroad upon wheels which impart motion to the excavating device.

Claim.—First, the guides *m' n'*, spring catches *r*, and levers *m n*, in combination with the adjustable standards *p* and slides L, as and for the purpose set forth.

Second, the curved levers G', arms *j*, in combination with the scrapers G and links H, as and for the purpose set forth.

Third, the standards E, cross trees *h'*, in combination with the shoots D and scraper G, as and for the purpose set forth.

Fourth, the carriers *f*, guides *f'* and spring *g'*, in combination with the shoots and scrapers, as and for the purpose set forth.

No. 47,230.—WM. A. SPRAGUE, Boston, Mass.—*Signal Frames.*—April 11, 1865.—These frames are either angular or square. The former are provided with three different kinds of joints, viz: hinge at the apex, and on the side opposite the apex to allow the frames to be opened, slide in the side frames to allow them to be lengthened or shortened, and swivel at the points of junction of the side frames with the end frames. The square frames are provided with a hinge joint in the centre of each side piece, to enable it to be folded together or opened; and also with hinge joints at the points of junction of the side pieces.

Claim.—Two kinds of frames to extend signals when there is no wind, as herein described and set forth in this specification.

No. 47,231.—THOMAS TAYLOR, Washington, D. C.—*Fuse Hood for Explosive Shells.*—April 11, 1865.—In this invention a hood or shield is secured around the neck of a projecting fuse stock, conforming generally to the front portion of the shell, and in close proximity thereto, for the purpose of directing the windage flame more certainly upon the time fuse.

Claim.—The use of the flame hood E, located between the front end of the shell and the front of the fuse, held secure in its place by the flange of the plug *c*, the same constructed and operated substantially as described.

No. 47,232.—ELI THAYER, Worcester, Mass.—*Sediment Extractor for Steam Boiler.*—Arpil 11, 1865.—This invention consists in placing a vessel upon the outside of the boiler for the reception of the sediment, and connecting it with the generator by pipes, in such a manner that a brisk circulation is kept up, and the earthy matter is deposited in the outside vessel.

Claim.—The vessel O, when arranged in the manner and for the purposes substantially as set forth.

No. 47,233.—FRANCIS S. THAYER, Troy, N. Y.—*Flour Bolt.*—April 11, 1865.—In this invention a tube passes through the shaft, and the weight is placed in the tube, which falls as the bolt rotates from side to side.

Claim.—The use of one or more falling weights, in combination with an inclosed tube, when the said tube passes entirely through the shaft, thus allowing the weights to fall from side to side of the bolt, substantially as and for the purpose set forth.

No. 47,234.—Timothy F. Wardwell, Penn Yan, N. Y.—*Box for Transporting Plants.*—April 11, 1865.—This invention consists in forming a box of flat pieces, grooved in such a manner that the parts will set correctly together, and form a strong and light box; and it also consists in the employment of a mould in which to put the box together, introduce the plant, and envelop and tie the box.

Claim.—A box for plants, &c., formed by the flat pieces of wood grooved and set together in the manner specified, and provided with an opening for the purposes and as set forth.

No. 47,235.—Cyrus M. Warren, Boston, Mass.—*Apparatus for Distilling Petroleum, &c.*—April 11, 1865.—This invention consists of a still connected with the lower end of a worm, the said worm being contained in a vessel placed over a furnace, and situated above the level of the still; the upper end of the worm is connected to the upper end of an ordinary condensing worm. The vessel is filled with oil, having a higher boiling point than the liquid to be distilled, and is provided with a thermometer. The object of the invention is to separate the different products contained in the petroleum, &c., so as to have them of a uniform consistency, as shown by their boiling point.

Claim.—The special application of heat by means of a separate fire, or its equivalent, to a condenser attached to a still, for the purpose of controlling and regulating the temperature of vapors given off in distillation, in order to produce a more complete separation of the constituents of complex mixtures of liquids.

No. 47,236.—Thomas Wellham, Washington, D. C.—*Machine for Pressing and Shaping Screws.*—April 11, 1865.—This invention consists in inserting in the periphery of a pair of rolls three or more adjustable dies at regular intervals; each die in one roll constituting, with the corresponding die in the other roll, a matrix in and by which, as the rolls revolve, and bring the corresponding dies together, the screw is formed by pressure.

Claim.—The combination and arrangement of the movable and adjustable dies H, and revolving stop J, as herein described, for the purpose of pressing and shaping screws by pressure, instead of cutting and swaging the threads of screws as heretofore.

No. 47,237.—Wm. Wharton, jr., Philadelphia, Penn.—*Machine for Levelling and Smoothing Ice.*—April 11, 1865.—This invention consists of an oblong frame, upon the front side of which is affixed a cutting edge of steel. From the forward end a tongue projects, and from the rear a guiding pole, with a bent knee, composed of a metallic rod that runs upon the ice. A wide board adjusts to the front side of the frame for removing snow.

Claim.—First, a machine for levelling and smoothing ice, consisting of a frame to which one or more blades or plates are secured, so that they may be carried across the ice perpendicular, or nearly perpendicular, to the surface of the latter, substantially as described.

Second, the inclined draught pole C, combined with the frame A and its blade *a*, substantially as and for the purpose described.

Third, the frame A, its blade *a*, draught pole C, and guide rod B, with its support D, the whole being constructed and arranged substantially as and for the purpose specified.

Fourth, the detachable plank H, in combination with the frame A and draught pole C, arranged substantially as and for the purpose specified.

No. 47,238.—John M. Whitall, Philadelphia, Penn.—*Stopper for Fruit Jars.*—April 11, 1865.—This invention consists of a hollow stopper, with an opening in the top to admit cold water. The part which fits the neck of the jar is made tapering; when the jar is filled with hot fruit, and the stopper is inserted in the mouth, the water in the stopper causes the steam to condense, forming a vacuum in the jar, and the pressure of the atmosphere on the stopper will cause it to remain securely in its place.

Claim.—A hollow stopper, with an opening at the top, and a cavity in it to hold ice or cold water, substantially as described, for the purpose specified.

No. 47,239.—Joseph Whittle, Philadelphia, Penn.—*Knitting Machine.*—April 11, 1865.—The object of this invention is to make what is technically called a "tuck." The longer-latchet needle in its descent does not allow the loop thereon to pass over it, and hence, in again ascending this loop, and the new one both remain on the needle shank, the next formed loop is carried over them both. The result is, that at desired intervals, which may be varied at will, a loop of one row or series may be interlaced with those of two or more, instead of only the adjacent series; these points of interlacing or tucking may alternate with similar series next formed.

Claim.—First, the self-acting needles *a'*, with their long latches operating in combination with the self-acting needles *a* and their short latches, substantially as and for the purpose specified.

Second, the cam cylinder, forming a zig-zag groove, one or more of the projections in which are cut away, in the manner and for the purpose described.

No. 47,240.—James P. Wood, Philadelphia, Penn.—*Automatic Valve for Steam Radiator.*—April 11, 1865.—This invention consists of a metallic cup placed inside of another, filled with any expansive substance, properly fastened in. Steam circulates between the two

cups, from any convenient connection with the radiator, and thence into a passage in the arch over the top of the apparatus and into a tubular projection, reaching nearly down to the thin metal-depressed cover of the smaller cup. A valve or plug resting on this cover fits into the end of this projection. When the heat expands the substance in the inner cup the cover is raised and the plug driven into this projection air-tight.

Claim.—The cup B, diaphragm C, and valve D, in combination with the vessel A and its tubes E and F, or their equivalents; the whole being arranged and operating substantially as and for the purpose herein set forth.

No. 47,241.—MICHAEL COLGAN, assignor to himself, CHARLES D. COOPER, and L. H. BECKWITH, Port Jervis, N. Y.—*Chain Hook.*—April 11, 1865.—This invention consists in constructing the hook and links of such size and shape that the strain is divided between three links.

Claim.—The hook A, in combination with corresponding suitable sized chain links B and D, so constructed that the hook will grasp the chain in the manner herein described, for the purposes set forth.

No. 47,242.—OLIVER P. MACGILL, Brooklandville, Md., assignor to himself and T. POULTNEY, Baltimore, Md.—*Horseshoe.*—April 11, 1865.—This invention consists of a false shoe, to be readily attached or taken off from the shoe that is fastened to the foot, which is constructed of two parts and hinged at the toe. The outer edges are flanged at the top and bottom, making a groove to embrace the insides of the fast shoes. Near the heel is an expanding screw, which, when the false shoe is placed within the shoe that is fast to the foot, screws outwardly, causing the flanges of the false shoe to embrace the other tightly, so as to hold it on while being worn. The upper face of the fast shoe is depressed sufficiently to receive the upper flange of the false shoe. In the lower flange of the false shoe are holes for the reception of calks or sharp points, with their heads resting against the lower face of the fast shoe, which may be readily removed to sharpen as required.

Claim.—First, the expanding frame, to be attached to the horseshoe, and provided with calk points or edges, substantially as described.

Second, the removable roughing points or calks passing through the frame and resting at their upper ends (in situ) upon the under side of the horse's shoe.

Third, the method of securing the false shoes to the ordinary shoe by means of the flanges on the expanding bars of the false shoe.

Fourth, the expanding false shoe, consisting of two parts hinged together, and provided with the expanding screw, substantially as described.

No. 47,243.—JAMES MOLYNEUX, assignor to the BORDENTOWN MACHINE COMPANY, Bordentown, N. J.—*Air Pump.*—April 11, 1865.—This invention consists in the combination of two pumps, having barrels of different diameters, with a reservoir situated between, and communicating with, both pumps, the air being partially compressed by the larger pump, and the air vessel serving to insure uniformity of action.

Claim.—The combination of two air pumps, having barrels of different diameters, with an air vessel or reservoir G situated between, and communicating with, both pumps, all substantially as set forth.

No. 47,244.—OLIVER B. NORTH, assignor to O. B. NORTH & CO.—New Haven, Conn.—*Harness Saddle.*—April 11, 1865.—This invention consists, first, in casting on or in the frame of the saddle-tree a series of studs or pins, which, entering into holes made to match them in the skirts, jockeys, or back bands, securely hold them together. By this mode of uniting these parts the jockeys and skirts can be sewed or stitched before they are attached to the frame, while the common mode is to do this afterward, and with great inconvenience, as the frame is an unwieldy thing to hold in the sewing clamps. And it further consists in a projection, cast on the under side of the seat, for fastening said seat, frame, and rein hook together.

Claim.—The use of studs or pins upon the frame, for the purpose of holding or of aiding to hold the skirts, jockeys, back or tug straps of the harness thereto, substantially as described.

Also, casting the bolt or projection *e* on the under side of the seat, as and for the purpose herein described.

No. 47,245.—ALVIN POND, Hamden, Conn.—*Carriage Bolt.*—April 11, 1865.—This invention consists in so swaging a square necked bolt from round iron that the line of junction of the square with the cylindrical portion shall be distinctly defined; the corners of said square portion terminating squarely and sharply, and not, as heretofore, merging gradually into the round or cylindrical portion.

Claim.—Manufacturing bolts from round iron by means of dies, formed so as to produce sharp corners at the ends of the squared portion, as set forth.

No. 47,246.—TIMOTHY J. POWERS, assignor to J. P. FITCH and J. R. VAN VECHTON, New York, N. Y.—*Machine for Cupping Metallic Cartridges.*—April 11, 1865.—This invention consists mainly in the arrangement and operation of an annular punch, the cutting edge of

which fits the upper part of a hollow or female die, and between which and the punch the blanks are cut. This annular punch, after cutting the blank, further descends and clamps the blank by its edge upon an inwardly projecting ledge, a short distance below the surface in said female die. While held in this position a mandrel, passing through the annular punch, forces the centre of the blank downward through the smaller portion of the female die, which, compressing the blank around and causing it to assume the shape of the mandrel, is carried by it through the said female die, and discharged on the withdrawal of the mandrel, and falls into any convenient receptacle.

Claim.—First, the combination, as described, in a machine for cutting out and cupping cartridge shells of the punch *d*, dies *i c e*, and adjustable table B; the whole operating as and for the purpose herein set forth.

Second, the rising and falling gauge *p*, applied in combination with the punch and dies, operated by means of a rod q', tappet arm *q*, and tappet collars or pieces $p' p^2$, and controlled by a rest *r*, substantially as and for the purpose herein specified.

No. 47,247.—MARTIN ROBBINS, assignor to himself and MAHLON M. WORNBAUGH, Cincinnati, Ohio.—*Automatic Grain Weigher.*—April 11, 1865.—This invention consists of a cylindrical barrel, rotating upon an inclined axis and divided into partitions. The support for the barrel is so balanced that when one of the partitions is filled with a certain amount of grain it is freed from a detaining catch, and allowed to come over the delivery spout, the fastening lever of the discharge gate passing in the mean time an upright by which it is opened. The opening and closing of the gate of the grain hopper is caused by a series of cam projections on the upper surface of the barrel acting upon a roller and lever attached to the hopper. The amount of grain discharged by the weigher can be regulated by the self-acting governor, which consists of a dial, having upon it a series of holes, into one of which a pin can be inserted. This dial plate is made to revolve simultaneously with the barrel until the pin strikes the lever, by which the roller is thrown off the cam and the hopper closed.

Claim.—First, the revolving and gravitating drum E E′, supported and balanced in the represented inclined position, and containing two or more chambers or compartments F F′ F″ F‴, for the automatic weighing of grain, substantially as set forth.

Second, the provision, on an inclined gravitating grain drum, of the cams J J′ J″ J‴, when combined with the devices *b b′* C *c*, or their equivalents, for the automatic opening and closing of the hopper bottom, as set forth.

Third, in the described combination, with an inclined gravitating grain drum, armed with studs K K′ K″ K‴, or other suitable projections, the adjustable gauge D *d*, substantially as represented, or any mechanical equivalent thereof.

Fourth, the devices L *l l′* I and M, or their mechanical equivalents, for the automatic opening and closing of each successive grain chamber, as set forth.

Fifth, the self-acting governor, consisting of the parts P Q R S T U V W *w*, in the described combination, with the parts *b b* C *c*, or devices substantially equivalent, for the automatic arrest of the weighing action, as set forth.

No. 47,248.—LUKE WHEELOCK, assignor to himself and O. B. LEAVENWORTH, New Haven, Conn.—*Syringe.*—April 11, 1865.—In this invention the discharge orifices are so made that the liquid is thrown backward instead of forward.

Claim.—A syringe, when the discharged apertures are formed substantially as and for the purposes specified.

No. 47,249.—ALBERT A. WILSON, Green Point, N. Y., assignor to himself and HOFFMAN ATKINSON, Rouseville, Penn.—*Well-boring Device.*—April 11, 1865.—This invention relates to that portion of a boring tool called the "jar," and consists in constructing the jar so that the surfaces thereof which come in violent contact are so strengthened, without increasing the diameter of the jar, as to lessen the liability of the links of the jar being broken when the second blow is struck by the upper link.

Claim.—The method, substantially as herein described, of increasing the sectional area and strength of the concussion surface of jars used in connection with tools for artesian well boring, for the purpose set forth.

No. 47,250.—GEORGE CARTER, Nottingham, England.—*Shears.*—April 11, 1865.—This invention consists in making a thin cutting blade, which is fastened to one of the jaws of the shears by screws. The other jaw is composed of two parts, with the edges bevelled on the outside, between which the cutting blade is made to shut in operating.

Claim.—Constructing shears, scissors, and other cutting instruments of a similar character thereto, with three edges, viz: one cutting edge and two edges for keeping the cutting edge in proper position, and for preventing the same moving sideways, substantially as set forth and described.

No. 47,251.—M. ANTOINE ESPIRAT and ETIENNE SAUSÉ, Marseilles, France.—*Filter.*—April 11, 1865; patented in France January 30, 1864; patented in England July 19, 1864.—

In this invention one or more filters are so arranged that when a certain quantity of water has passed through them a lever and valve are automatically operated to reverse the current, and thus remove the accumulated impurities.

Claim.—The combination of the filters G H and R S, with their reservoirs B and L, when constructed and operated substantially as and for the purposes described.

Also, in combination with the filters and their reservoirs above described, the self-cleansing apparatus, consisting of pipe *p*, reservoirs *c c'* O', wheel *a*, and syphons *d u*, when constructed and operated as herein described.

Also, in combination with the filters and the reservoirs *c c* O' and their operating devices, the recipient *x* and pipes V Z, as substitutes for the pipe *p*, as and for the purposes set forth.

No. 47,252.—ALEXANDER GUERRIERO, Genoa, Italy.—*Revolving Fire-arms.*—April 11, 1865.—In this invention the cylinder is provided with a removable breech cap attached to it by a bayonet-joint fastening and spring catch so as to revolve therewith, and this again is cased in a stationary breech cap attached to the stock or frame. On the turning of a locking cam pin, which secures the barrel to the centre pin, the barrel, cylinder, and its breech cap are separately removable from the centre pin and stock.

Claim.—First, the combination in a revolver of the following parts: the barrel, the cylinder, the breech plate, and the stock, when the said parts are constructed as described, each being capable of being detached in the manner and for the purpose set forth.

Second, in combination with the many-chambered cylinder and rotating breech plate, the means herein described of locking and unlocking the same.

Third, the combination of the rotating cylinder and breech plate with a fixed breech casing and its spring packing device, to hold the breech plate in place without interfering with its rotary movement.

No. 47,253.—THOMAS BURNS, Williamsburg, N. Y.—*Barrel Packer.*—April 11, 1865.—This invention consists in giving to the barrel a rocking motion while being packed, such motion being produced without striking the edges of the barrel with much force, the head of the barrel being kept constantly upon the platform.

Claim.—First, giving to the barrel the rocking motion, substantially as shown, for the purpose specified.

Second, in combination with the flanged platform A, levers C C2, provided with the elongated slots G G2, the adjustable clamp J, when the same shall be combined and operated substantially as and for the purpose specified.

No. 47,254.—CHARLES W. CAHOON, Portland, Maine.—*Wick Scraper.*—April 11, 1865.—This invention consists of a flat piece of metal, having a part of it made in the form of a ring for a handle by which to hang it up, and another with a rectangular inlet to scrape the top of a lamp wick.

Claim.—A wick scraper substantially as described.

No. 47,255.—EDWIN S. DRAKE, Portland, Maine.—*Saw.*—April 11, 1865.—This invention consists in affixing to or forming the teeth of a straight or circular saw of diamonds or other precious stones of great hardness for the purpose of cutting stone.

Claim.—As a new article of manufacture, a saw constructed with cutting points or edges, substantially as described.

No. 47,256.—JOHN H. IRWIN, Chicago, Ill.—*Apparatus for Carburetting Air.*—April 11, 1865.—This invention consists in placing the carburetter above the burners, in order that the carburetted air may fall by its own weight to the burners, and its place in the carburetter be supplied by fresh air through the inlet.

Claim.—Arranging a carburetting apparatus, provided with an inlet for air and an outlet for gas above the point of combustion, substantially as and for the purposes herein set forth and shown.

No. 47,257.—JOHN H. IRWIN, Chicago, Ill.—*Process for Carburetting Air.*—April 11, 1865.—This invention consists of a furnace connected with a flue, the said flue communicating with the carburetter. The air in the furnace on being heated rises into the tube, and from thence passes into the carburetter, where it is discharged with hydro-carbon vapor. It is then allowed to pass to the different burners.

Claim.—Producing a current of air through a carburetting apparatus and a pressure at the burners by the action of heated air, substantially as and for the purposes herein specified and shown.

No. 47,258.—JOHN H. IRWIN and ISAAC SIMMONS, Chicago, Ill.—*Apparatus for Carburetting Air.*—April 11, 1865.—This invention consists of a series of carburetting chambers, connected together by means of pipes. The air is admitted through a vertical flue, which is connected to the carburetting chambers by means of pipes, and the carburetted air passes through similar pipes into a chamber to be drawn off for use. The chambers are so arranged that any one of them can be removed for repairs without stopping the operation of the others.

Claim.—First, so arranging a series of carburetting pans, A, with the chambers C D and connecting pipes, provided with stop-cocks or other equivalents, that the apparatus may be regulated, controlled, and operated substantially as and for the purposes set forth and shown.

Second, the combination of a series of carburetting pans with the chambers C and D and the two series of connecting pipes G and L, provided with the stop-cocks or their equivalent, operating substantially as and for the purposes specified and shown.

Third, the combination of a series of carburetting pans with the chambers C and D, and the three series of connecting pipes G, L, and Q, substantially as and for the purposes specified.

Fourth, in combination with the series of pans A and the chambers C D, the employment of a condensing chamber, E, as and for the purposes set forth.

Fifth, connecting the said pans and chambers A C D by removable or detachable pipes, ubstantially as and for the purposes specified.

No. 47,259.—DANFORTH JOHNSON, Chicago, Ill.—*Churn Dasher.*—April 11, 1865.—This invention consists of a churn dasher having grooves around the bottom in the form of a wedge, thereby giving a greater pressure to the cream than one ordinarily made with holes, and at the same time causing the cream to expand in its upward motion and breaking the globules more effectually.

Claim.—A wooden churn dasher, conical or oval on the top, with wedging apertures around the bottom edge of the dasher for compressing the cream, in the manner and for the purpose set forth.

No. 47,260.—E. L. PRATT, Boston, Mass —*Scraper for Cleaning Gun Barrels.*—April 11, 1865.—This cleaner is constructed of a series of thin plates cut separately out of steel or rolled metal, and set in a grooved or morticed shaft or foundation piece at one end to secure them in position. This foundation piece is affixed to the end of the rammer. A ring confines the blades, so that as they descend into the gun barrel they do not touch its inner surface. On striking the bottom the ring is forced upward and the blades allowed to expand so as to press against the inner surface of the barrel and cleanse it as they are drawn out. A swab is arranged between the blades so as to cleanse the breech.

Claim.—The spring blades, when cut from sheet metal, and swayed or stamped into form, substantially as set forth.

Also, the attachment of the blades to a shank or foundation piece, in the manner substantially as described.

Also, the construction of the gun cleaner, by which the ring is prevented from slipping therefrom, substantially as set forth.

Also, the employment of the swab in combination with the spring blades, substantially as set forth.

Also, the construction of the spring blades, by which they form a trumpet mouth, substantially as described.

No. 47,261.—THOMAS SIMMONS, Chicago, Ill.—*Filters.*—April 11, 1865.—This invention consists of a tube, within which are two coils of wire in line, each confined between two disks. Each coil is enveloped with cloth drawn tight above, below, and between the two coils. The water is admitted within the upper distended sack, and percolates laterally and downward into the lower sack, whence it flows out of the narrowing cylinder and into another cylinder, the top tapering end and the bottom tapering end of which contain gravel, confined by a perforated cone pointing to the cylinder, the body of said lower cylinder being filled with carbon, separated from the gravel at each end by a perforated disk.

Claim.—First, the combination and arrangement of the spiral wire C, the horizontal plates H, and the fibrous covering F, when inclosed inside of a case, A, substantially as and for the purpose set forth.

Second, the combination and arrangement of the above with the carbon cups, substantially as and for the purposes described.

No. 47,262.—HENRY TUBESING, Pittsburg, Penn.—*Flexible Types and Apparatus for Printing.*—April 11, 1865.—This invention is intended for marking boxes and packages having uneven surfaces, and it consists of a roller over which elastic types, cast in a peculiar form, are bent and fastened.

Claim.—Making the separate pieces of elastic type, with a projection at top and bottom having a gutter for the purpose of holding them in place by means of a cord or similar device for that purpose.

Also, the use of a flexible bed plate for holding the movable elastic type, so that the bed plate and type may be attached to the curved surface of a frame, substantially as described.

Also, the use of strips of leather or other flexible material, placed above and below the upper and the lower line of type, for the purpose of keeping the movable type straight and yet allowing the form to be readily curved when set on the machine for the purpose of printing.

Also, the mode of securing the movable elastic type to the bed plate, by means of elastic cords resting upon the projecting base of the type, substantially as described.

Also, the combination of the flexible bed plate A, flexible strips *b* and *d*, and slide *e*, with a a curved or cylindrical frame for printing with movable elastic type, substantially as described.

No. 47,263.—ERASTUS S. WOODFORD, Winchester, Conn.—*Ox Yoke.*—April 11, 1865.—This invention consists in arranging the blocks in the slot of the yoke, so as to give any desired leverage to the same.

Claim.—The manner of arranging the staples and cords, in combination with the bow blocks 5 and 6, the centre blocks 1 and 2, and the caps 3 and 4, as and for the purposes herein set forth.

No. 47,264.—WM. ADAMSON, Philadelphia, Penn.—*Apparatus for Agitating and Kneading Substances.*—April 18, 1865.—This invention consists of a circular vat provided with openings, the top and bottom being furnished with covers. In the centre of the vat is a vertical shaft passing through a stuffing box in the cover. To the spindle is secured a horizontal arm, one end of which is connected to the link, the other end being connected to the ring by means of a rod. The shaft of the conical roller has its bearing at one end in the link and at the other end in the ring, which turns freely on the shield.

Claim.—First, the cone-shaped roller caused to traverse in a circular path and to revolve on its own axis in a closed vessel within which pressure is maintained by the introduction of steam or otherwise, all substantially as and for the purpose herein set forth.

Second, the combination of the vat, having either an open or closed top, with the central shield H and the traversing and revolving roller.

No. 47,265.—G. T. ALLAMBY and JOHN G. BUGBEE, Bangor, Me.—*Crutch.*—April 18, 1865.—This invention consists in inserting in the foot of the crutch a movable spike, which can be pushed out when desired and held firmly in position by means of the catch moving in the curved slot.

Claim.—A spike, C, inserted in a metal socket, B, placed on the lower end of a crutch or cane, and provided with a spring, D, and an arm, E, the latter extending through a slot, F, in the socket, all arranged to operate substantially as and for the purpose set forth.

No. 47,266.—THEODORE ASCHERFELD, Elkton, Md.—*Time Reporter.*—Antedated April 18, 1865.—A dial marked with figures to indicate hours and fractions of hours is placed in a box with a lid slotted to such an extent as to enable the hand of a man to be introduced far enough to admit of writing a name on the dial. As the dial revolves once in twelve hours, the place thereon where the name is written indicates the exact time when it was written, and thus enables the employers to detect any lack of promptness on the part of employés. The dial is securely fastened by means of pins to metallic plates to prevent its being changed. Another metallic plate is so placed beneath the dial and the slot through which it is written upon as to prevent the introduction of a pointed instrument to stop the turning. Upon this plate is placed a cloth saturated with printers' ink or other transferring material, which being in contact with the under surface of the dial, receives impressions when the latter is written upon, and thus indicates that the writing was done through the slot.

Claim.—First, the plates C D, having pointed projections *c d* and apertures *c' d'*, for securing the dial E and preventing the position of the same being changed without detection, substantially as and for the purposes specified.

Second, the metallic plate G, applied beneath the dial E and aperture A2, to prevent the entrance of a pointed instrument, as described.

Third, the cloth G' placed between the aperture A2, and saturated with printers' ink or other suitable material, or covered with transferring paper for preventing fraudulent inscriptions, as explained.

No. 47,267.—J. S. & T. B. ATTERBURY, Pittsburg, Penn.—*Lantern.*—April 18, 1865.—This invention consists in a lantern frame made without fastenings, and attached to the glass case by screwing over its points in the manner described, and other combinations therewith.

Claim.—First, securing in place the guard frame of a lantern in the act of securing the metallic mountings or collars to the globe of the lantern, substantially as described.

Second, the combination of screw collars, rings, or mountings B B' with a wire guard frame and a globe adapted to receive the same, substantially as described.

Third, a lantern globe constructed substantially as described.

No. 47,268.—JAMES S. & THOS. B. ATTERBURY, Pittsburg, Penn.—*Globe Lantern.*—April 18, 1865.—This invention consists in a combination of a reflection and one or more signal plates with a lantern globe, substantially as described.

Claim.—First, a signal globe lantern, having one or more signal plates, *b*, applied to it, substantially as described.

Second, the combination of a reflector *a*, signal plate or plates *b*, and lantern globe A, substantially as described.

No. 47,269.—ALFRED BAILEY, Amesbury, Mass.—*Making Printed Felt Hats.*—April 18, 1865.—In this invention, after the hat has been reduced to its ultimate shape on the block, the crown is cut off an inch or more above the brim. Each of the sections are then reduced to a plane by the usual means. The two parts are then printed or embossed; when they are restored to their shape on the block and served together.

Claim.—As an invention the improved mode, as above described, of making a printed or embossed felt hat.

No. 47,270.—A. T. Ballentine, New York, N. Y.—*Feed Bags for Horses.*—April 18, 1865.—This invention consists in attaching to the head strap of a feed bag another strap across the forehead, for the purpose of keeping the bag from slipping back over the neck of the animal; and also in the arrangement of loops at the opposite end, so as to admit of the horse moving sidewise in either direction.

Claim.—The combination of the flexible bag A, head-stall *a b*, rope B, sheave C, and adjusting loops *c*, all as herein described and for the purposes specified.

No. 47,271.—Stephen S. Bartlett, Providence, R. I.—*Self-lubricating Spindle Bolsters of Spinning Frames.*—April 18, 1865.—In the rail of a spinning frame is set a bolster for the support of the spindle. Within this bolster is accurately fitted a metallic casing, which immediately surrounds the spindle. In the outer surface of this casing, and between it and the bolster, is a vertical groove running from the top into a transverse circular groove near the bottom of the casing. At the junction of these two grooves is a hole through the casing, with which communicates a spiral groove on the inside of the casing, traversing it from top to bottom. The lubricant is poured into the vertical groove first mentioned, passes through it into the horizontal circular groove and thence through the aforesaid hole into the spiral groove on the inside of the casing, in which it comes in contact with the surface of the spindle and passes up.

Claim.—First, the combination with the bolster and casing of a spinning frame spindle of a vertical groove *d* and oil hole *g*, substantially as and for the purposes described.

Second, the combination of the groove *m* in the upper part of the bolster C with the vertical groove *d* and oil hole in the casing, substantially as and for the purposes described.

Third, the combination of the circular grooves in the bolster and casing with the vertical groove *d* and oil hole *g*, substantially as and for the purposes specified.

Fourth, the combination with the bolster C of a casing *a*, having a vertical groove *d*, oil hole *g*, and inner spiral groove *n*, substantially as and for the purposes specified.

No. 47,272.—John A. Bassett, Salem, Mass.—*Apparatus for Carburetting Air.*—April 18, 1865.—This invention consists of a case, provided with a holder, working in a seal. In the lower part of the vessel, a few inches from the bottom, are placed a series of half-cylinders with serrated edges, the open part of said cylinders being below the level of the benzine. These half-cylinders are connected with a hood, through which air is forced, the air entering at the edges into the benzine. The air is forced into the hood by means of the metre, which consists of a case containing a flexible diaphragm, connected to the shaft by means of a cross-piece. On the top of the case are valve-seat openings which communicate with the space on each side of the diaphragm; these openings being covered by the valve. At one side of the case is placed a reservoir containing benzine. This reservoir communicates with the case by means of an aperture provided with a valve. A tube, connected with the interior of the case, terminates in the upper part of the reservoir.

Claim.—First, the general arrangement and construction of the apparatus, as shown and described.

Second, the carburation of air or gases by the submerged serrated tubes, in combination with the reservoir, substantially in the manner described.

Third, the combination of a power metre, constructed substantially as described, with an apparatus used to aerate and vaporize liquid hydro carbons, the whole operating together in the manner and for the purpose substantially as set forth.

No. 47,273.—John A. Bassett, Salem, Mass.—*Barrel for Holding Oil.*—April 18, 1865.—This invention consists in lining barrels for holding petroleum, &c., with a composition of sulphur, white clay, and plumbago.

Claim.—The herein described compound, consisting of the materials specified, or their equivalents, when used for lining or coating barrels or other vessels, substantially as set forth.

No. 47,274.—Anthony A. Bennett, Norwalk, Conn.—*Waste Saving Attachment to Cording Engine.*—April 18, 1865.—The object of this invention is to retain the short waste fibre escaping from the main cylinder. The roller, by reason of the direction of its revolution, prevents the currents of air, caused by the quick motion of the main cylinder, from drawing this fibre away from the doffer, inasmuch as it breaks the current. The heavy dirt will fall between the blades of the roller and be brushed off by the leather.

Claim.—First, the combination of the curved shell waste saver A, having a plain face, and the receptacle guard roller *c*, or their equivalents, in the manner and for the purpose substantially as herein described.

Second, the clearing brush G, or its equivalent, operating in combination with the waste saver A and the guard roller *c*, for the purpose described.

No. 47,275.—N. E. Blake, Almond, N. Y.—*Fire-proof Roof Composition.*—April 18, 1865.—This invention consists of earth containing oxide of iron, coal tar, and linseed.

Claim.—The within described composition, made substantially in the manner and proportions as set forth.

No. 47,276.—Politorus Bottyer, Newark, N. J.—*Harness Saddle.*—April 18, 1865.—This invention consists in a recess or groove to receive the shank of the hook, two holes through the saddletree and the shank, corresponding to two projections on the under side of the cantle. A piece of leather is placed between the cantle and the tree. The parts of the saddle are held together by means of screws, the heads whereof are countersunk into the under side of the saddletree.

Claim.—Inserting the rein hook in, and securing it to, the saddletree, as herein above specified.

Also, holding the parts of the saddle together, in the manner described, when so held in combination with the improved manner of holding the hook.

No. 47,277.—James F. Brewer and Enos E. Stow, Plantsville, Conn.—*Whip Socket.*—April 18, 1865.—This invention relates to the mode of attaching whip sockets to the dash-boards of vehicles by means of straps. The socket is provided, at its upper and lower ends, with slots or openings through which the straps are passed and made to encompass the socket in such a manner as to form cushions or guards within the socket to hold the whip-stock firmly, the straps also serving as a means of securing the socket to the dash-board.

Claim.—The securing of whip sockets to the dash-boards of vehicles by means of straps passing alternately in and out through slots or openings in the socket, substantially as herein shown and described.

No. 47,278.—George W. Briggs, Fiskeville, R. I.—*Self-lubricating Spindle Bearing for Spinning.*—April 18, 1865.—In this invention the revolving cup receives and retains the oil which escapes from the bolster, and the annular chamber at its top prevents its being thrown out by centrifugal force and wasted.

Claim.—In upright and inclined bearings the cup or socket D attached to and revolving with the spindle, in the described combination with the spiral groove G in the bearing C, for the purposes set forth.

No. 47,279.—Victor H. Buschman, Baltimore, Md.—*Sawing Machine.*—April 18, 1865; antedated April 17, 1865.—This invention consists in having a series of sets of feed rollers so arranged and controlled by a central weight (to each set) that the frames in which the rollers are hung will preserve their parallelism and accommodate themselves to boards of different thicknesses; they also being capable of deviating from parallel planes to accommodate themselves to boards of unequal thickness. It consists also in the employment of pressure rollers, applied so as to guide and hold the end of the boards up to the saw after leaving the main feed rollers. These pressure rollers only take hold of the upper end or edge of the boards.

Claim.—First, so arranging and supporting feed and pressure roller frames B B′, which are controlled by a central force, that while they will preserve their parallelism and accommodate themselves to boards of different thicknesses passed between them, they are also allowed to deviate from parallel planes and accommodate themselves to boards of uneven or unequal thickness, substantially as described.

Second, the employment of pressure rollers *f f*, or their equivalents, applied so as to guide and hold the ends of the boards up to the saw after leaving the main pressure rollers, substantially as described.

No. 47,280.—George B. Clarke, Leonardsville, N. Y.—*Combined Spittoon and Foot Warmer.*—April 18, 1865.—In this invention, inside a foot warmer, and surrounded by the heating agent, such as coals or lamps, or any convenient device, is placed a detachable spittoon, the flaring mouth of which opens on top of the foot warmer.

Claim.—A combined spittoon and foot warmer, or furnace, constructed substantially as described.

No. 47,281.—Richard Clement, Philadelphia, Penn.—*Artificial Leg.*—April 18, 1865.—Within the leg, and immediately below the calf thereof, is placed a pin, to which is fastened one end of the principal cord that supports the knee. As considerable wear and strain come upon this cord, it is often necessary to remove a worn and apply a fresh one. The aforesaid pin is made removable in order to facilitate this operation. A firm gut cord is fastened at one end in the lower part of the heel, passes thence round a pulley just forward of the hollow of the foot and runs thence directly upward to its connection with an elastic spring, which is joined by means of another gut cord to a holder just above the front part of the knee joint.

Claim.—First, the removable pin I, when used in the manner and for the purposes specified, substantially as described.

Second, the cord I, in combination with the pulley M and spring N, when constructed in the manner and for the purpose specified, substantially as described.

No. 47,282.—Albert L. Dewey, Westfield, Mass.—*Treadle Motion.*—April 18, 1865.—This invention consists of a spiral spring placed upon a shaft and confined at one end to a hub, the other end being free. The hub is fitted loosely on bosses, and is provided with two

flanges extending around it, and between these flanges is a belt, which is secured to the hub; the lower end of the belt being secured to the hub.

Claim.—The spring E and hub D applied to shaft A, substantially as shown, and used in connection with a foot treadle, all arranged to operate in the manner substantially as and for the purpose set forth.

No. 47,283.—EDWARD DUNSCOMB, Boston, Mass.—*Guide for Piston Rods.*—April 18, 1865.—This invention consists in placing two friction rollers, which are grooved to fit the rod, one upon each side thereof, in such a way as to receive the steam upon the end curved by the angles at which the crank presses upon said rod. The object of this arrangement is to dispense with the necessity of providing a cross-bend, and at the same time lessen the friction upon the parts.

Claim.—As my invention in a crank, eccentric or any equivalent motion or movement, the employment and application of anti-friction rollers, substantially as herein before described.

No. 47,284.—CHARLES E. EMERY, Brooklyn, N. Y.—*Balanced Slide Valves.*—April 18, 1865.—This invention consists in the combination and arrangement of a valve having two parallel faces, and bearing upon two seats, one directly above the other, with the steam chest so arranged that the parts which support the valve seats and regulate the distance between the same shall be in actual or metallic contact with the surface upon which they rest, and thence prevent any change in that respect. Provision is made in the construction of the valve and its seats by which it can be withdrawn from its position without disturbing the joints of the steam chest.

Claim.—First, the combination of a valve, of the kind or style above specified, with its seats in such a manner that when the parts *a* and *b* of the valve are secured together, or cast or formed in a single piece, the whole valve may be inserted in and removed from its place by putting one part *b* through an opening *c* in one of its seats *a'*, substantially as described and as shown in the figure numbered 3.

Second, the use of the supports *a''* *a''*, Fig. 4, or their equivalents, between the valve seats *a* and *b* and of the standards or supports *s s* between the parts *a* and *b* of the valve, with actual or metallic contact at such of their joints as can vary the distance between the valve seats or faces, combined in manner described, to secure the purposes herein specified, with a common joint, of any reliable kind, to prevent leakage, substantially as shown and applied in Fig. 4, between the steam chest, seat *a'*, and cover D.

Third, the combination, to accomplish the purposes intended and specified, of a double-faced slide valve, of the kind or style to which these improvements are applied, as above expressed, with a steam chest, or its equivalent, supporting one or both the parallel valve seats, and so constructed that all joints between the parts of such steam chest or equivalent or between such steam chest and either or both of said valve seats *a'* and *b'*, which can vary the distance between said seats, are made in sufficient actual or metallic contact, by scraping, grinding, or other means, to be tight without other appliances, and sustain said seats at a proper and certain distance from each other, substantially as described.

No. 47,285.—TURNER EVANS, Paris, Iowa.—*Hand Spinning Machine.*—April 18, 1865.—This invention relates to a combination of devices designated in the claim and not admitting of a brief description.

Claim.—The combination of the roll receiver H, the crank shaft R, the spindle frame *o*, the thread guide *m*, the shaft T with pulleys attached, the bar G, the pivoted bar F, spring W, and the hook *u*, the whole constructed and operating substantially as and for the purpose herein set forth.

No. 47,286.—WILLIAM L. FABER, New York, N. Y.—*Process of Working Silver Ores.*—April 18, 1865.—The object of this invention is to work silver ores more economically than can be done by the present process, and it is intended to be applied to real ores of silver, such as occur in Arizona, Nevada, &c., but not to argentiferous lead ores. Where gold occurs with the silver ores, it is all obtained by this process alloyed with the silver.

Claim.—First, the within described process for treating silver ores, consisting of eight different manipulations, as enumerated under the proper heads.

Second, the process as modified by omitting the first and sixth manipulations, and treating the ore as described under the second, third, fourth, fifth, seventh, and eighth heads.

Third, the process as modified by omitting the fourth, seventh, and eighth manipulations, and treating the ore as described under the first, second, third, fifth, and sixth heads.

No. 47,287.—JOHN P. FARMER, Cambridge, Mass.—*Skate.*—April 18, 1865.—This invention relates to a skate by which it can be fastened to the foot of a person with ease and security. A broad strap goes across the entire foot part and comes down in front of the toe of the skater's boot. At the toe a screw projects backward and into a long slider on which a nut is screwed. On the heel is a catch on hooks. The toe of the boot is to be inserted, the skate then pulled backward to cause the catch to extend in rear of the heel of the boot. The nut is then rotated on the screw until it abuts against the toe rest on the front end of the slider.

Claim.—The combination and arrangement of the encompassing toe strap D with the slider E, its retracting mechanism, the heel catch C, and the foot rest A applied to the runner B.

Also, the arrangement and combination of the screw F and the nut G with the toe part of the skate runner and the slider E and strap D, the whole being substantially as described.

Also, the combination and arrangement of the passage *a* with the slider E and the screw F, and the nut G, arranged at the toe part of the skate runner as described.

No. 47,288.—E. Victor Fassmann, New Orleans, La.—*Hoop Lock for Cotton Bales.*—April 18, 1865.—The object of this invention is to obtain a cotton bale tie which may be cheaply manufactured, admit of having the ends of the hoops readily applied or attached to it to secure the hoops on the bales, and which will admit of the hoops being applied to bales varying in size.

Claim.—The plate A provided with the slots B B, and ridges or projections *b b* at one or both sides of the plate, and with the slits *a'*, to form a new and improved cotton bale, tie or hoop lock, as set forth.

No. 47,289.—Thomas M. Fell, New York, N. Y.—*Mine Pump.*—April 18, 1865; ante dated, April 7, 1865.—The object of this invention is to produce a direct acting mine pump to be actuated by the combined force of steam and air, made more available by the production of a vacuum, whereby to considerably reduce the expenditure of fuel and the cost of enginery for such purpose. Its novelty consists in the combination and arrangement of the cylinder connected to the main pump by the rods, chain, weight, exit pipe valves and condensing apparatus.

Claim.—The combination of the several devices, viz: the cylinder *a* connected with the mine pump by the rods T, exit pipe S, weight V, chain *w*, condensing apparatus K Q and L, and the valves B C R L and O, substantially and for the purpose as herein set forth.

No. 47,290.—William S. Fickett, Rochester, N. Y.—*Rock Drill Apparatus.*—April 18, 1865.—This invention consists in providing the driving shaft of a rock drill with a compound, or a fixed and a loose crank, which permits the drill to fall suddenly and rapidly from its raised position, instead of gradually as when it is operated by a fixed crank. A self-acting locking bar is employed to catch and hold the loose crank on the upper centre, and thus prevent its vibrations, which would otherwise occur when it is relieved from the weight of the drill at this point.

Claim.—First, working the drill by means of a crank composed of a fixed arm C, and a loose one C', constructed and operating conjointly, substantially in the manner shown and for the purposes described.

Second, the employment of the locking bar or latch G for the loose arm of the crank, said bar having an automatic action, substantially as and for the purpose set forth.

No. 47,291.—Charles Fownes, Pittsburg, Penn.—*Stove.*—April 18, 1865.—In this invention, into and through a central tube, air from below the stove flows by convenient passages. In the chamber formed by this tube and outer cylinder flanges are placed alternately on the tube and cylinder, so that products of combustion from the fire-pot will roll from side to side and against both walls.

Claim.—The annular deflectors F G attached alternately to the external case A and internal tube D, in the described combination, with a fire chamber from which heated products of combustion are passed through the annular flue so as to heat air in its passage through the air tube D.

No. 47,292.—A. O. Gallop, Salem, Conn., and E. A. Hewett, New London, Conn.—*Churn.*—April 18, 1865.—This invention consists in a peculiar formation of the sides or bottom, or both, of the churn, with a series of sharp pyramidal polygonal or any other suitable shaped projecting points or spurs of any desired number and size, and at any suitable distance apart, against which the cream, as it is agitated in the churn by any suitable dasher, is thrown and thereby its globules of butter broken. It also consists in the use of a peculiarly shaped dasher, composed of a series of beaters arranged on a shaft, either spirally or otherwise, and having their outer ends formed with one or more sharp points or spurs for cutting and breaking the butter globules, said dasher shaft being placed in a proper position to act in connection with the said pointed bottom or sides of the churn.

Claim.—First, forming the sides or bottom of the churn, or both, with a series of sharp pointed spurs or projections, arranged substantially as and for the purpose specified.

Second, the use of the pointed dashers or beaters arranged as described and for the purpose specified.

Third, the combination of the dashers *h h* with projections *f f*, arranged and operating substantially as described.

No. 47,293.—Edward M. Gardner, Nantucket, Mass.—*Smoke Pipe Damper.*—April 18, 1865.—In this invention a smoke pipe which has narrow openings cut horizontally, a narrow curved damper is arranged, so that it can be drawn up by a nut to cover said opening, and give free passage for the products of combustion, or let down so as to close said pipe entirely.

Claim.—The combination of the curved damper with the round pipe, and the air inlet C, such damper being hinged to the pipe, and arranged with respect to the said air inlet, in manner and so as to operate with the same and the pipe substantially as specified.

No. 47,294.—JOSEPH GEORGE, Green county, Mo.—*Plough.*—April 18, 1865.—In this invention, a curved coulter bar has its heel secured to the back brace and beam of the plough and the working parts, composed of the land side and mould board, so that one piece of various sizes can be secured upon the stock.

Claim.—The curved coulter bar B, it having a heel *e*, secured to the back brace *b*, and beam A, as described, in combination with the land side D, and mould board C, they forming plough shares of various sizes to be fitted on one stock, the same being secured and operated substantially in the manner herein set forth.

No. 47,295.—WILLIAM GINNAUGH, Niles, Mich.—*Composition for Cleaning Marble, &c.*—April 18, 1865.—This invention consists of a composition of ground marble, oxalic acid, pumice stone, muriatic acid, alcohol, saltpetre, borax, and sal soda.

Claim.—The within described marble restorative, made of the ingredients specified, and mixed together in about the proportions and substantially in the manner set forth.

No. 47,296.—GILBERT R. GLADDING, Providence, R. I.—*Artificial Fuel.*—April 18, 1865.—This invention consists of seventy-five pounds of anthracite coal dust, twenty-five pounds of coke dust, sixteen pounds of fresh slaked lime, and four pounds of adhesive clay. The mass is well mixed and moulded into cakes of proper size and form.

Claim.—A composition fuel composed of the combustible materials above mentioned, in combination substantially as described, and held in mass by fine and adhesive clay, or similar s ubstances, as described.

No. 47,297.—ALEXANDER W. HALL, New York, N. Y.—*Machine for Crushing Ore, &c.*—April 18, 1865.—A horizontally-moving, direct-acting stamp is employed in connection with a stationary abutment. The upper faces of the stamp and abutment are inclined from each other, so as to form an opening for the reception of the ore, while their lower faces are parallel, or nearly so, that the ore may be crushed between them. The stamp is operated by means of an eccentric and sliding journal-box at its rear end, whereby the inventor claims he obtains a more effective crushing force than is obtained by placing the eccentric near the head of the stamp.

Claim.—The combination of a horizontally-moving, direct-action stamp and a stationary abutment, having the upper parts of their working faces convergent, and the lower parts thereof parallel, when the movement of such stamp is produced by an eccentric at the rear end of the stamp, acting in concert with a sliding journal-box near the head of the stamp, substantially as and for the purpose herein specified.

No. 47,298.—ADOLPH HAMMER, New York, N. Y.—*Cooler for Breweries.*—April 18, 1865.—This invention consists of a shallow pan, divided into two chambers by a horizontal partition. This partition is provided with zig-zag flanges on the top and bottom, and the work flows through the channels formed by the upper flanges, the cooling liquid flowing in the opposite direction through the channels on the under side of the partition.

Claim.—The horizontal partition *a*, with a double set of zig-zag flanges *b b*, one above and the other below, in combination with the pan A, constructed and operating substantially as and for the purpose set forth.

No. 47,299.—JOSEPH HAMPSON and GEORGE LADUE, Newburgh, N. Y.—*Pump.*—April 18, 1865.—In this invention a horizontal cylinder receives water near both ends below and discharges it into an air chamber above. The several valves, being set to operate alternately in pairs, are connected to a single lever by means of which they may be controlled. A spiral spring determines the position of this lever and of the valves when the same is at rest. The piston has a brass exterior attached by depressing a narrow circle of it into an annular groove in the cylinder. Thick elastic disks, clamped to the inside of the cylinder heads, form at once packings and cushions to sustain the shock of the piston stroke.

Claim.—First, the arrangement to lift both suction valves and one discharge valve by means of small cogs below the valves connected by the rods *r*1 *r*3 *r*4 to the one main rod P P′, and by a spiral spring applied to the rod P P′ as specified.

Second, in combination therewith a solid piston, having an exterior of brass attached, as herein specified.

Third, the application of India-rubber plates on the inside of the cylinder heads, so as to form a packing and a cushion for the piston, all substantially as shown and described.

No. 47,300.—JOHN HARVEY and FREDERICK HERKSTRODER, St. Louis, Mo.—*Lap Shaver and Leather Splitter.*—April 18, 1865.—This invention consists in an adjustable pillar block, a pressure roller, a guage fastened to the machine, and a lock pin to be inserted into holes bored in one of the ends of the excentric roller to stop the motion of the latter when it strikes against the plate of the gauge.

Claim.—The adjustable pillar block *a*, the pressing roller *d*, the gauge *e*, and the adjustable block pin *i*, arranged and operating in the manner and for the purpose set forth.

No. 47,301.—Chas. Heaton, New York, N. Y.—*Separating Gummy and Silicious Matters from Vegetable Fibres.*—April 18, 1865.—In this invention the gummy matters are first softened by means of steam and then dissolved by means of an alkaline liquor. The fibrous material is then passed between rollers, or crushed in a press, afterwards dried, and beaten in a *willon* or other machine, so as to separate all in vegetable matters.

Claim.—The application of mechanical pressure substantially as decribed for the purpose of separating gummy or silicious matters from vegetable fibrous materials.

No. 47,302.—H. A. Hildreth, Lowell, Mass., and W. J. Johnson, Newton, Mass.—*Wire Broilers or Toasters.*—April 18, 1865.—This invention consists of an ordinary square, folding wire gridiron, made with a frame of stout wire on which the cross wires are fixed; the ends of the frame at which the cross wires are fixed are crimped to keep said cross wires firmly in position.

Claim.—An improvement in the construction of wire broilers and toasters, the crimping of the frames for the reception of the bars or slats, substantially as and for the purpose described.

No. 47,303.—William Hoffman, Washington, D. C.—*Bayonet Attachment.* –April 18, 1865.—This invention consists in the way of making the bolt which secures the ear of the frog to the loop and inserting the pin in the plate, which pin coming in contact with the projections in the bolt head will prevent the scabbard from revolving above the horizontal line on either side.

Claim.—The form above described of the bolt and plate making part of the frog or attachment, which prevents the scabbard from revolving above the horizontal line on either side.

No. 47,304.—Peter Hogg, New York, N. Y.—*Steam Trap.*—April 18, 1865.—The object of this invention is to discharge, automatically, water of condensation from steam pipes and other vessels. Its novelty consists in an open-mouthed float with its valve collar in combination with the perforated pipes, the casing, and the connecting pipe.

Claim.—First, the open-mouthed float with its valve collar, or their equivalents, in combination with the perforated pipe D, substantially as described.

Second, the use in steam traps of an open-mouthed float which opens and closes the orifices for the discharge of water from the trap, substantially as described.

Third, the combination of the float, constructed substantially as described, with the discharge pipe D, the casing A, and the connecting pipe G, substantially as shown.

No. 47,305.—Samuel M. Hoover, Carlisle, Penn.—*Gum Elastic Coupling Spring.*—April 18, 1865.—This invention consists in making a spring by enclosing disks of vulcanized rubber in a metal tube with a rod running through the disks to a nut and washer.

Claim.—The use of elastic rubber enclosed in a metallic case, constructed and connected substantially as and for the purposes specified.

No. 47,306.—Henry B. Horton, Ithaca, N. Y.—*Calendar Clock.*—April 18, 1865.—This clock indicates the time of day, the day of the week, the day of the month, and the month. The changes are made instantaneously at midnight. The several wheels are held at all times by means of stops or pawls, so that no accidental turning can occur or displacement be effected by motion of vessels at sea, or from other causes. The pawl, which acts against each of the thirty-one teeth of the month wheel in succession, is made to pass over the 29th, 30th, and 31st teeth, or over the two latter, or over the last as occasion may require, by means of a lever cam on the month wheel.

Claim.—First, the use of the stops or pawls S and S X, or other equivalent device, for the purpose of fixing with precision the movements of the month, the day of the week, and the year wheels, as described.

Second, the lever cam *f* on the month wheel J for the purpose of passing the stop or pawl R over the 31st tooth of the month wheel for months of 30 days, and over the 30th and 31st teeth for February, leap-year; and over the 29th, 30th, and 31st teeth of said wheel when February has 28 days, or otherwise using the said lever cam *f* for the same purpose.

Third, the detached lever *a* for the purpose of changing the length of the months, and of February in leap-year, in a 31 toothed month wheel; and also the detached lever when acting in combination with the lever cam *f* of the month wheel, the cams on the year disk, and the projections on the four-year wheel.

Fourth, putting on, but not fixing fast, the four-year wheel to the shaft of the month wheel as described.

Fifth, the wide cam *e* on the corrugated disk Z of the year wheel, or its equivalent, for the purpose of carrying the bent rod lever *a* on the projections of the four-year wheel.

Sixth, operating the calendar by the slotting of the rod R about the shafts of the cam A for retaining the rod in its place; and also by the combination of the cam A and rod B, producing the changes of the calendar instantaneously at midnight.

Seventh, securing by the pin W the double flexion of the rod B at C, and thus the pawls T and U; and also holding the lever H by the other pin *w* and the pawls under it; and also by the said pins, the pawls *m* and *k*, thereby preventing any displacement of the calendar during transportation.

Eighth, the click *r* for reducing the labor of bringing up the weight lever *n*, drawing a period of 72 hours or less, according to the distance the lever falls, by the lengths of the different months.

No. 47,307.—JAMES G. HUNT, Cincinnati, Ohio.—*Farm Gate.*—April 18, 1865.—In this invention the gate is operated by pulling a pendent cord on approaching the gate, which is thereby opened by the action of a system of wheels and levers. The wheels are enclosed between two plates, which form bearings for the same, the lower one of which covers and protects the top of the post from exposure to the weather.

Claim.—First, the hollow cap composed of plate C′, constructed and applied together, and to the gate post A, substantially as and for the purpose described.

Second, the arrangement of pulleys *g g′*, on the arm *e*, of the segment, in combination with the pull-cords *i i′*, arranged and operating upon the gate and bolt *m*, substantially as described.

Third, the levers D G, rod *n*, and spring-bolt *m*, applied to a swinging gate, which is opened and closed by means of two cords *i i′* acting upon a system of levers, substantially as described.

No. 47,308.—GUSTAVUS A. JASPER, Charlestown, Mass.—*Cleansing and Revivifying Charcoal.*—April 18, 1865.—This invention consists of a filter for containing boneblack for purifying sirup, with a close-fitting dome, and two cisterns for sirup and water. A chambered pan is fastened to the bottom of the filter, and above it are perforated plates with a space between them for the entrance of steam. The arrangement of the pipes and stop-cocks is such that either steam or water may be passed through the charcoal in the filter either upward or downward, at pleasure, so as to remove all impurities from the charcoal without taking it from the filter.

Claim.—The washing or cleansing of the charcoal within the filter by reversed currents of water, and by steam applied to it, substantially as hereinbefore described.

Also in combination therewith, the application of an acid solution, substantially in the manner and for the purpose described.

Also, the combination and arrangement of the separate blanket chamber with the filter, so applied to the filter as to enable the blanket or blankets to be removed from it without disturbance of the charcoal charge of the filter.

Also, the application of the exhaust-cock *h*, and the pipe *t*, or either, to the side of the filter and to its blanket chamber, substantially in manner as described.

Also, the combination and arrangement of the cistern F, its pipes *p′ t*, and the discharge cock *c*, with the filter A′, the pipes *p′* and *t*, having stop-cocks *b* and *d*, and the whole being to operate substantially as described.

Also, the combination of the filter, an apparatus or means of causing water to flow through it in reversed directions, and a means of applying steam to the filter or contents thereof, in manner, and the whole being for the purpose or objects as specified.

No. 47,309.—NATHIEL JENKINS, Boston, Mass.—*Cock.*—April 18, 1865.—In this invention a flexible globular valve is embraced by a thimble, which screws upon a swivel revolving within the follower, so that when the valve is seated it is further pressed to its place by the revolution of the follower, the valve and swivel remaining stationary.

Claim.—First, the swivel H, in combination with the follower E, and seat L, substantially as and for the purpose described.

Second, the combination and arrangement of the thimble I, swivel H, and packing K, substantially as and for the purpose described.

No. 47,310.—ISAAC JOHNSON, Lodi Station, Ill.—*Lightning Conductor.*—April 18, 1865.—The nature of this invention is explained by the claim and engraving.

Claim.—A lightning conductor composed of a triangular tube A with inwardly arched sides, in combination with a continuous central iron wire C′, extending partly or wholly through the length of the tube, substantially as and for the purpose herein set forth.

No. 47,311.—STEFAN KACKOWIZER, New York, N.Y.—*Manufacture of Friction Matches.*—April 18, 1865.—This invention consists in giving the friction mass of matches a metallic-like coating by mixing with the mass, salt of lead, and then exposing the match to sulphurated hydrogen until a coating of sulphate of lead is formed.

Claim.—The formation of a metallic skin around the friction or phosphoric mass of matches, consisting of sulphide of lead, substantially in the manner above described.

No. 47,312.—PETER LOTH, New York, N. Y.—*Chandelier.*—April 18, 1865.—This invention consists in the combination of a sliding-joint with the central tube of a chandelier in such a manner that it can be used in the ordinary manner, and at the same time a drop-light is obtained which can be used alone or in combination with the chandelier.

Claim.—First, a chandelier and central adjustable drop-light combined, as a new article of manufacture.

Second, the chamber *b c g*, in combination with tubes and pipes *d' e j*, arms *f* and *h*, and balance weight *k*, or their equivalents, all constructed and operating substantially as and for the purpose set forth.

No. 47,313.—ALFRED E. LYMAN, New York, N.Y.—*Deoderizing Coffin.*—April 18, 1865.—In this invention the gases which are evolved from decomposition are conducted from the coffin through a tube and chamber filled with a deodorizing composition. By making the tube in sinuous form, a greater length is obtained.

Claim.—The deodorizing machine of the crooked or angular form, for the purposes herein described and substantially set forth.

No. 47,314.—DANIEL LYNAHAN and HARRY H. KOCK, Buffalo, N. Y.—*Fastening for Blocks of Shoe Last.*—April 18, 1865.—This invention consists in a revolving spring-bolt set vertically in the last, with its lower extremity enclosed in a spiral spring intervening between the head and the wooden plug, the upper end of the bolt being bent to form a hook, to bear upon the block by the force of the spring.

Claim.—The improved device for fastening the blocks to shoe lasts consisting of the revolving hooked bolt *b* and spring *e*, or its equivalent, arranged and operating substantially as described.

No. 47,315.—WM. C. MCGILL, Cincinnati, Ohio.—*Mechanical Movement.*—April 18, 1865.—This invention consists in the peculiar combination and arrangement of the parts, and is well understood by the claim.

Claim.—First, the arrangement of shaft A, ratchet wheel C, geared levers D D', and pawls E E', combined and operated in the manner set forth.

Second, the arrangement of shaft A, duplex reversed ratchet wheel C, general levers D *d* and D *d'*, and reversible duplex pawls E'' and E''', combined and operating as represented.

No. 47,316.—JAMES P. MCLEAN, Brooklyn, N. Y.—*Manufacture of Gun-cotton and Lint.*—April 18, 1865.—This invention consists in the use of the "asclepias syriaca," commonly called milk-weed, in the manufacture of gun-cotton and lint. In preparing the fibre for lint it is taken from the pods and the seeds separated by hand. The fibre is then oiled with vegetable oil and spun into yarn, the oil afterwards being removed in any well-known manner.

Claim.—The introduction and use of the asclepias, or milk-weed fibres N N, figures 1 and 2, for the manufacture of a new article of gun-cotton, also for lint, either from the fibre itself or from the fabric or yarn made of the fibre, as above set forth.

No. 47,317.—DAVID M. MEFFORD, Cincinnati, Ohio.—*Cartridge for Small Arms.*—April 18, 1865.—This cartridge for sporting purposes consists of a light wooden can to contain a charge of shot and a small quantity of powder, in combination with a fuse tube deeply imbedded in the charge, intended to be ignited at the discharge of the piece, so that it may explode the powder and scatter the shot in the cartridge, at a distance from the gun, greater or less, according to the length of the fuse.

Claim.—The combination of the wood case A, the binding cord *f*, the metal cap *e*, and the fuse tube D, for explosive cartridges as herein described, for the purposes set forth.

No. 47,318.—C. MASON MOODY, Greenfield, Mass.—*Dusting Brush.*—April 18, 1865.—This invention consists in a dusting brush composed of a series or bundle of flexible or elastic quills, or supports, to which any suitable soft, flossy, or fibrous material is attached.

Claim.—A dusting brush composed of a series or bundle of flexible or elastic quills or supports A, to which any suitable soft, flossy, or fibrous material is attached, substantially as herein shown and described.

No. 47,319.—RICHARD W. MORAN, St. Louis, Mo.—*Printing Press.*—April 18, 1865.—This invention consists of a combination of impression cylinders and conducting tape rollers, by means of which both sides of continuous sheets of paper can be printed by once passing through the press, and by a peculiar construction of the "turtles" and "galleys."

Claim.—First, the combination in a single printing press of two independent type cylinders B B', and corresponding impression cylinders H H' and J J' with each other, and with independent systems of tape rollers and endless tapes, substantially as herein set forth, whereby two separate rolls or sheets of paper may, in passing simultaneously through the press, both receive on each side opposite impressions from each type cylinder.

Second, also the within-described combination of distinct galleys *g g* with the turtles E E of a printing press, when the same are constructed and arranged substantially in the manner and for the purpose herein set forth.

No. 47,320.—D. B. MUNGER, Mumford, N. Y.—*Bean Harvester.*—April 18, 1865.—In this invention pullers are guided on and out of a hollow cylinder, by a cam upon one end. The pullers rest upon springs inside the cylinder.

Claim.—First, the cam guides *g*, in combination with the puller heads H, substantially as and for the purposes set forth.

Second, in combination with the cam guides *g* and puller heads, the springs S, or their equivalents, for the purposes specified.

No. 47,321.—Isaac Myers, Pisgah, Ohio.—*Apparatus for Manufacturing Sugar, Wine, and Oil from Sorghum* —April 18, 1865.—This invention consists of an evaporating pan, supported over the furnace by means of the ropes attached to windlasses. The pan has an inclined bottom, and is provided with a partition extending from the top to near the bottom. At one side of the furnace is placed a finishing pan resting in a square boiler containing water, which is heated by a pipe connected with the chimney of the furnace. The boiler is connected to a cylinder by means of a pipe, which is also connected to a water chamber kept filled with cold water by means of the gate.

Claim.—The arrangement, construction, and combination of the oblong furnace A, adjustable molasses pan J, finishing pan N, boiling-water pan P, with its steam-condenser R, all as herein described, and for the purposes herein set forth.

No. 47,322.—Joseph W. Norcross, Middleton. Conn.—*Tackle Hook.*—April 18, 1865.—The object of this invention is to overcome two of the principal difficulties experienced in the use of the common hooks, &c., the straightening of the hook and the spontaneous unhooking of the same.

Claim.—The band B, passing around the neck and point of the hook, and secured to the latter, in the manner herein set forth.

No. 47,323.—A. B. Nimbs, Buffalo, N. Y.—*Tension Pulley.*—April 18, 1865.—In this invention the frame is constructed of such weight that it will produce the required tension upon the belt, and the journal boxes will admit of easy adjustment.

Claim.—First, supporting the tension pulleys B in a frame A of cast iron, having in itself sufficient weight to give the required tension to the belt. substantially as described.

Second, combination of the spherical sleeve C′, within which the straight journal of the shaft runs, with the spherical socket C, for the purposes and substantially as set forth.

Third, supporting the tension pulleys B in the frame A, by means of journal boxes C O′, made capable of adjustment to bring the tension pulley shafts in line with that of the driver, without such adjustment causing them to bind the journals running therein.

No. 47,324.—John H. Noyes, Oneida, N. Y.—*Travelling Lunch Bag.*—April 18, 1865.—This invention consists in combining with a travelling bag a lunch bag, or receptacle, and also a pocket, if desired; all being constructed and arranged in such a manner that the necessary clothing of a traveller, letters and papers, and also provisions or lunches may be carried in one device, with equally as great facility as clothing alone can be carried in ordinary bags.

Claim.—A combined travelling bag and lunch box, or receptacle, with or without the pocket, constructed and arranged as herein set forth.

No. 47,325.—Henry Oaks, Waynesboro', Pa.—*Lock.*—April 18, 1865.—In this invention this lock is applied to the jamb or post of the door instead of the door itself, and consists of a case in which is arranged two arms, which, diverging from a pivot which passes through one end of each, embraces between them an India-rubber spring. In the outer end of each arm is a notch to receive corresponding hooks formed on the inner edge of each of the two limbs of a staple. A bar of iron secured to the face of the door projects beyond the edge of the door, and has a groove formed on three sides of the said projecting portion for the reception of the staple. To lock the door the staple is passed into the lock, and as it is pressed inwards the two arms are forced towards each other until the hooks enter the notches and the staple lying in the groove embraces the projecting bar. For unlocking, a key is used which, acting upon certain devices, press the arms toward each other and then release the staple.

Claim.—First, the hooked detachable hasp I, in combination with the bar D, the expanding jaws J T′, and spring K, substantially as and for the purpose described.

Second, the combination of the expanding jaws J J and spring K, with the drawing and thrusting bars L M, operated respectively by the bits R S on the key, as described.

Third, the key Q with the operating bits R S, as described, and the supplementary safety bits T, located on the shank relatively to a notch in the side of the passage way occupied by the shank in unlocking and affording a means of adapting each key to a specific lock, as described.

No. 47,326.—S. E. Oviatt, Richfield, Ohio.—*Threshing Machine.*—April 18, 1865.—The blast is discharged directly upon the carrier that conveys the straw from the threshing cylinder to the endless apron in the rear that stacks it. The blast is discharged in this manner for the purpose of flattening the straw down upon the carriers and preventing its clogging the machine; also for the purpose of clearing the front of the machine from dust. The stacker is connected to the rear part of the frame by means of an articulating attachment, so that it may be elevated or depressed without changing the relative positions of the pulleys which operate its elevator belt. Diagonal cross-braces connect the carrier straps of the elevator belt to prevent their running off their pulleys. In the grain receptacle are placed about at the centre two inclined planes meeting at their upper sides which *shed* the grain to each side of the box and enable it to be drawn off by gates provided for the purpose.

Claim.—First, the discharging the blast from the case K, above the threshing cylinder through a pipe or flue upon the separating carrier between the threshing cylinder and the tail board for the purpose of bearing down the straw upon the separating carrier and of forcing the same along without clogging, as well as for clearing the front of the machine from dust, substantially as and for the purpose described.

Second, hinging the stacker to the rear end of the threshing machine in such a manner that it is perfectly free to be elevated or depressed on said hinge without changing the relative positions of the pulleys D and D′, which operate the elevator belts of the stacker, substantially as and for the purposes described.

Third, the braces I I in combination with the carrier C C and S, as described.

Fourth, the grain box F with the inclined planes G G and gates F, so arranged as to draw the grain from either side of the machine, as herein specified.

No. 47,327.—Charles Palmer, Brookline, Mass.—*Foot Warmer.*—April 18, 1865.—This invention consists of a sheet metal box, in the bottom of which is placed a close receptacle filled with sand, through which the gas passes, and at the top of which it is burned; a plate of soapstone is placed over the flame to rest the feet on, and to keep this plate from burning a piece of wire gauze is interposed between it and the flame.

Claim.—A foot warmer, consisting of a receptacle B for holding sand, upon the surface of which the gas is burned, and a box or casing A, provided with a perforated foot rest, substantially as described.

No. 47,328.—John S. Patrie, Victor, N. Y.—*Air-compressing Apparatus.*—April 18, 1865.—This invention consists in the employment of a reservior or chamber composed of two compartments, which are separated by a flexible diaphragm connected to an adjusting bar that operates the inlet and outlet water valves of each chamber. The apparatus is placed at the foot of a water fall and water is supplied to the compartments, which are filled alternately and emptied by means of the floats and valves. When either compartment is emptied of the water contained therein, an air valve is opened and the air rushes in and fills the space vacated by the water, when, at the proper time, by the action of the floats and levers acting upon the diaphragm, the inlet valve is opened and the water enters by virtue of its gravity, and the air is compressed and forced out of that compartment to a suitable reservoir, where it is reserved for use in any suitable engine.

Claim.—First, the combination of the floats F and F′, and the diaphragm *d* with the inlet and outlet water valves *a* and E and E′, all the parts being arranged and operating within the air and water chamber.

Second, operating the water valves *a* and E by the bar *s*, which is connected to the flexible diaphragm *d*, substantially as set forth.

Third, the combination of the floats F and F′, with the jointed levers *f* and *f′*, arranged and operating substantially in the manner and for the purpose shown and described.

No. 47,329.—Theodore G. Pelton, Lyons, Iowa.—*Hog Tamer.*—April 18, 1865.—This invention consists of a pair of slotted jaws in shear blades that have an iron or steel barbed staple which is forced through the snout of the hog.

Claim.—The slotted spring *e*, the slotted jaw *a*2, the grooved jaw *a*, with its gage B, the barbed wire *m* of steel or iron, all for the purpose as above set forth.

No. 47,330.—Robert Perrine and Samuel M. Stewart, Rochester, N. Y.—*Hose Carriage.*—April 18, 1865.—This invention consists in the employment of a peculiarly formed crane or frame on each side of the carriage for supporting the hose-reel, so arranged as to furnish the greatest amount of strength and to allow the front wheels to run under the same. The box that contains the same and the fuel box have a single spring on each side, so as to give the desired elasticity to both cranes and fuel box.

Claim.—The construction and arrangement of the cranes B, and the box C, and their connection with the same springs *h* by means of the joints G, or their equivalent, substantially as and for the purposes herein set forth.

No. 47,331.—Nathaniel F. Potter, Providence, R. I.—*Machine for Tempering and Preparing Peat.*—April 18, 1865.—A mas of raw peat is placed in a circular bed provided with a rim. At the centre of this bed is an upright rotating shaft which carries a radial arm, upon the end of which is a wheel arranged to approach and recede from the aforesaid upright shaft along the radial arm, as the latter sweeps over the circular bed. The wheel thus describes a spiral track through the mass of peat. Upon the hub of the wheel, enlarged so as to form a drum, is arranged a series of fingers, long enough to penetrate nearly to the bottom of the mass of peat as the wheel cuts through it, and take up such undecomposed vegetable fibres as may lie in their way. This fibre is removed from the fingers by a revolving brush, and deposited in a trough in which is an Archimedean screw longitudinally arranged, which carries off the fibre to the waste box.

Claim.—First, the use of a series of combing teeth *a a a*, or their equivalents, operating upon the mass of peat to remove the undecomposed vegetable fibre, in the manner and on the principle substantially as described.

Second, the combination of a brush, or a series of brushes O or clearers, with the combing teeth *a a a*, substantially as described for the purposes specified.

Third, the employment of a series of comb teeth N, arranged substantially as shown, in combination with the brush or series of brushes O, for the purposes described.

Fourth, the method, substantially as described, of separating the vegetable fibre from a mass of crude peat and transferring the same to a place where it can be removed by the combination of the movable set of comb teeth *a o a*, the stationary set of comb teeth N, and the clearing and delivering brushes O, as herein set forth.

Fifth, the use of a receiving trough G, or its equivalent, provided with the Archimedean screw K, arranged and operating to receive the refuse vegetable material extracted from the peat and to deliver the same to suitable receptacles, as described.

Sixth, the combination of such receiving and delivering apparatus with the apparatus for extracting and transferring the refuse vegetable material to the same, as herein described.

No. 48,332.—T. J. POTTS and P. C. YOST, Hamilton, Ill.—*Cultivator.*—April 18, 1865.—In this invention the ploughs are moved laterally by a lever arranged on a slotted perpendicular bar, and working at its front end between the prongs of a foot lever.

Claim.—The lever L, fitted in the slotted bar M, and connected at its rear to a cross bar J attached to the standards *e* at the rear of each beam, the front end of said lever being fitted between the prongs *h h* of a foot lever N, and all arranged to operate in the manner substantially as and for the purpose set forth.

No. 47,333.—THOMAS L. ROBINSON, Boston, Mass.—*Apparatus for Separating Fish Oil from Water and other Impurities.*—April 18, 1865.—This invention consists of a cylinder-shaped vessel placed in a vertical position within the frame-work, and having its ends closed and of a conical shape. A water tank communicates with the cylinder by means of a pipe, through which the water and other impurities are withdrawn. Water is then let through the pipe, by means of which the oil is washed and caused to flow through the pipe into a proper receptacle.

Claim.—First, automatically separating and purifying oils from all extraneous matter and liquids contained therein, by means of an apparatus arranged and operating substantially as herein described.

Second, forming the oil vessel *b b* with heads or ends of a conical shape, substantially as described and for the purpose specified.

Third, the use of the peculiar-shaped nozzle or sprinkler *z* for the delivery of water to the oil vessel *b*, arranged and operating substantially as described and for the purposes specified.

Fourth, dividing the oil vessel *b b* into two or more chambers having communication with each other, for the purpose of preventing the violent upward agitation of the oil, substantially as described.

Fifth, the apparatus herein described for separating and purifying oils from extraneous and refuse matters and liquids, the same consisting of the double-headed conical-shaped vessel *b b*, oil pipes *o o* and *r r*, water pipes *h* and *p*, and sprinkler *z*, or their equivalents, the whole being arranged together and operating substantially as described.

No. 47,334.—ELISHA ROBBINS, Worcester, Mass.—*Carriage.*—April 18, 1865.—In this invention the body of the cart is allowed to move so that the load will be kept in advance of the axis of the axle, and the cart is prevented from tipping.

Claim.—The application of the axle to the cart body so as to be capable of moving underneath and with reference to such body, in manner as described, and connecting the axle with the thills, and the latter with the body by mechanism, substantially as specified.

Also, in combination with the axle, so applied to the body and thills, the rack and pendulous double catch, or the equivalents thereof, such being applied to the body and axle, substantially as and to operate as described.

Also, the combination of the tongue *e* and the eye or clasp *f*, or their mechanical equivalents, with the axle applied to the cart body and the thills, in manner and to operate substantially as explained.

No. 47,335.—CHARLES WILLIAM ROESLING, Cleveland, Ohio.—*Powder for Lighting Cigars, &c.*—April 18, 1865.—This invention consists of a mixture of potash, burnt alum, powdered charcoal, and rye flour. These ingredients being well mixed, are heated to redness in a close vessel.

Claim.—The composition, prepared substantially as set forth for the purpose specified.

No. 47,336.—HERMANN ROETTGAR, Philadelphia, Penn.—*Acromatic Object Glass for Photographic Cameras.*—April 18, 1865.—The object of this invention is to obtain a large amount of equally illuminated surface, and avoid spherical and chromatic aberration. It is attained by the use of four glasses—two flint and two of crown glass—of different curves, cemented together.

Claim.—The construction of an achromatic object glass, composed of four lenses—two of crown glass and two of flint glass—cemented, to compose one object glass for telescopes, as well as for other purposes, in the manner shown and described.

No. 47,337.—JULIUS AUGUSTUS ROTH, Philadelphia, Penn.—*Artificial Fuel.*—April 18, 1865.—This invention consists of coal dust, seven parts, with lime, one part, mixed into milk of lime, and formed into blocks. The blocks are placed in a hoop or kiln, and the fumes from sulphurous coal passed through them to dry and change the lime into sulphate or carbonate and solidify the blocks.

Claim.—The impregnation of the solution of lime with sulphurous acid, obtained from coal or other sulphate, for the purpose of conglomerating the waste coal dust, and thereby producing a solid fuel, substantially set forth in specification.

No. 47,338.—E. P. RUSSELL, Manlius, N. Y.—*Reel for Harvester.*—April 18, 1865.—This invention consists in making the reel shaft in two pieces, which overlap and slide past each other through clamps which retain them in proper relation to each other; the object being to adapt the reel, in a machine having a hinged cutting apparatus, to the varying relations of the reel supports while passing over uneven ground. It further consists in a peculiar construction of the double clamps which unite the reel ribs with the arms.

Claim.—First, constructing the shafts of harvester reels in two pieces S' S^2, or their equivalents, operating substantially in the manner and for the purpose specified.

Second, the clamps I, constructed, applied, and operating substantially as and for the purposes herein specified.

No. 47,339.—WILLIAM RUSSELL, Beloit, Wis.—*Graining Instrument.*—April 18, 1865; antedated December 14, 1864.—In this invention the improvement consists in placing curved strips of wood in sections over the painting surface, and making them elastic or adjustable by means of spiral springs, &c., so as to print on unequal surfaces.

Claim.—As an improvement in a graining machine or tool, the curved-shaped pieces of wood B B, or any other available material, divided in sections and attached to the solid piece A, and made with screws and springs adjustable, and made of brass, iron, rubber, or any other proper material, the whole in combination and for the purpose set forth.

No. 47,340.—J. A. SAFFORD, Boston, Mass.—*Leather Shoe-string Cutter.*—April 18, 1865.—This invention consists in a circular cutter with a tangential opening and a cutting end; in the employment of a cutter spring within the cutter, whereby the leather is kept in a proper position while being drawn out into strings: in rendering the opening adjustable, and in continuing the circular cutter outward of the throat so as to form a wing.

Claim.—First, the circular cutter C with a tangential opening and a cutting end *h*, substantially as set forth and for the purpose described.

Second, the employment of the spring J, or its equivalent, within the circular cutter C, substantially as and for the purpose described.

Third, rendering the tangential opening or throat adjustable, substantially as and for the purpose described.

Fourth, the tangential wing or cutter *i*, substantially as set forth and for the purpose specified.

No. 47,341.—JOSEPH F. SARGENT, Boston, Mass.—*Heel-trimming Machine.*—April 18, 1865.—This invention consists in an irregular-shaped pattern block, the outline of which, in different horizontal planes, corresponds to the outlines of the various sizes and form of heels to be cut; in the combination with said block of jaws clasping the shoe, and by their contact therewith determine the size and form of heel to be cut; and in the provision for vertical movement of the shoe or the cutter for trimming such heels as are united to vamps, upon a curved or irregular joint.

Claim.—The combination of a pattern block with a heel-cutting or trimming mechanism, when the block is so arranged and is of such form as to serve as a pattern for trimming heels of different sizes and contours, substantially as set forth.

Also, a mechanism so organized that the size and form of the heel are determined by the size of the shoe and patterns or pattern block, substantially as set forth.

Also, the combination of the jaws *l*, arm *i*, inclines *h*, and pattern block, arranged to operate together, substantially as specified.

Also, the employment of an adjustable or spring last pin in connection with a clamping mechanism, substantially as described.

Also, the auxiliary roll *r* in combination with the pattern roll, for giving the proper angle of presentation to the stationary knife *g*.

Also, the arrangement of a shoe in a yoke with the heel, centered with respect to the post which carries the pattern, and so as to be held toward and rotated with respect to the cutting mechanism, substantially as set forth.

Also, the arrangement of the mechanism by which, when the joint between the heel and vamp is irregular, the shoe shall have a corresponding vertical movement given to it, as set forth.

No. 48,342.—GEORGE W. SAYRE, Pisgah, Ohio.—*Railway Car Seat.*—April 18, 1865.—This invention consists in an adjustable swinging and revolving chair operated by an

arrangement of upright parts, and a notched lever at the side, and an adjustable flat spring underneath.

Claim.—The arrangement, construction, and combination of the upright ends G of the bar E, notched lever M, and adjustable flat spring J, as herein described and for the purposes set forth.

No. 47,343.—T. S. SPERRY, New York, N. Y.—*Machine for Covering Wire.*—April 18, 1865.—In this device the wire to be covered passes through a vertical hollow shaft or standard, supported by a suitable frame, and forming a spindle, the top of which is surrounded by a sleeve bearing on its upper end a disk or circular platform, upon which is mounted, on upright pins or standards, two or more spools containing the covering wire, by fastening the end of which to the top of the wire to be covered, and revolving the disk or platform, the wrapping wire surrounds the other, which is prevented from turning by the standard or spindle that supports it, and which remains stationary, while each successive coil of the wrapping wire, crowding between the preceding one and the conical top of the spindle, gives an automatic feed to the central wire.

Claim.—First, in a machine for covering wire with wire, making the main wire self-feeding, by means substantially as herein described.

Second, the smooth projection *d* on the end of the hollow spindle C, in combination with one or more guides *c*, or equivalent therefor, or the disk F, which carries the spools containing the covering wire, substantially as and for the purpose shown and described.

No. 47,344.—N. SUTTON, Detroit, Mich.—*Pump.*—April 18, 1865; antedated April 3, 1865.—The object of this invention is to cause a continuous flow of water or other fluid from the pump by a constant movement upward of the pump pistons alternately. The novelty consists in the combination of the eccentric gearing with the piston rods. The stuffing box applied to the upper piston is used in combination with the solid and tubular piston rods.

Claim.—The combination and arrangement of the eccentric gearing with the piston rods C D, substantially as and for the purpose specified.

Also, the stuffing box E, when applied to the upper bucket or piston B, and used in combination with the solid and tubular piston rods C D, substantially as and for the purpose set forth.

No. 47,345.—DANIEL TAINTER, Worcester, Mass.—*Carding Machine.*—April 18, 1865.—In this invention the claim and drawing define the object and nature of the improvement.

Claim.—First, the combination with the main frame of a machine for carding wool or cotton of a supplemental hinged or swinging frame for supporting the feed rolls, burr, and leading in cylinders, substantially as and for the purposes described.

Second, the combination with the hinged frame H of the pivoted hook *b*, or its equivalent, with the pin *c* on the main frame, substantially as and for the purposes specified.

Third, mounting the burr cylinder and feed rolls on a hinged frame, whereby said cylinders and frame can be lowered or removed from the main cylinder, substantially as and for the purposes described.

Fourth, mounting one or more of the small cylinders which assist in conveying the fibrous material to the main carding cylinder of a wool or cotton carding machine, upon a hinged swinging frame, whereby the latter can be expeditiously lowered or removed from the main cylinder, for the purpose of clearing, grinding, or repairing said cylinders, or to make room for the easy removal of other cylinders, substantially as herein described.

No. 47,346.—B F. TRIMMER, Rochester, N. Y.—*Grain Separator.*—April 18, 1865.—The nature of this invention is fully set forth in the claim.

Claim.—First, a draught passage D, of sufficient transverse dimensions to enable a draught proportioned in amount to the quantity of grain passing through it, to be employed and arranged so as to diffuse or concentrate the draught uniformly upon the falling grain, according to the kind, quality, or condition thereof, and at right angles, or nearly so, thereto. And in combination therewith a valve L and board K, or its equivalent, arranged so as to properly separate the sound grain from the refuse, as the intensity of the draught or the kind or condition of the grain varies, substantially as herein specified.

Second, in combination with the board K, having a passage for the draught both above and below, and with the pocket I, the valve N, so arranged as to cut the passage off entirely at the top and force it to pass downward through the pocket, or to allow the passage at the top, substantially as described.

Third, the adjustable board H, arranged in combination with the mouth *a* of the space D, in such a manner as to contract or concentrate the draught upon a particular portion of the falling stream of grain, or to diffuse it through said space, substantially as described.

Fourth, a series of two or more pockets I I′, in combination with the screws S S S beneath, in such a manner the contents of said pockets will fall on said screens and mix with the main portion of grain through spout F, and so that the pockets I′, that contain the greatest amount of refuse with the smallest amount of sound grain, shall pass over a shorter space of the screens, substantially as described.

Fifth, the combination and arrangement of the tilting board W with the pocket I′, screens S S, tube T, and discharge pipe *p*, in such a manner as either to discharge the contents on said screen, or into said spout, substantially as herein set forth.

Sixth, the combined construction and arrangement of the tubes T U, provided with the valves *t t″* at their upper ends, and having the grain crossing the lower ends from the screens, by means of the chutes *q s*, as and for the purposes herein described.

Seventh, in combination with the shoe P, the spring standards Q Q′, those in the rear being raised or lowered by means of the rock-bar *k* and pinion *l*, in such a manner as to adjust the angle of the shoe, said shoe being operated by the spring pitmen R R, the whole arranged and operating substantially as and for the purpose herein set forth.

Eighth, the removable section S′ and the slide S″ of the screens S S, arranged in relation to said screens, and the shoe P, in such a manner that the end of the shoe may be opened to allow the cleaned grain to fall directly through, substantially as described.

Ninth, in combination with the section S′ of the screen, provided with enlarged perforations, the slide *u*, substantially as and for the purpose herein set forth.

No. 47,347.—MATHEW TSCHIRGI, Dubuque, Iowa.—*Reservoir for Beer, Wine, &c.*—April 18, 1865.—This invention consists of a reservoir made of brick and provided with a pipe near the top, and an air discharge pipe. The reservoir is also provided with a gauge and gate near the bottom. The inside of the reservoir is lined with cement, and coated with a varnish made of alcohol, shellac, and beeswax.

Claim.—First, the employment of subterrene structures for the purpose of storing beer and other fermentable liquids, which are constructed of masonry, and rendered impervious to air, substantially as described.

Second, providing reservoirs of masonry, which are adapted for storing beer and other liquids, with feed pipes, gauges, and man-holes, substantially as described.

No. 47,348.—ALBERT W. UPTON, Lowell, Mass.—*Suspenders.*—April 18, 1865.—In this invention an elastic strap ascends the back of the wearer between the converging ring, or eye of the back straps, and the converging ends of the shoulder straps.

Claim.—The improved suspenders as made with the single elastic dorsal strap *b*, arranged and combined with the shoulder and back buttoning straps, substantially in manner and by means as specified and as represented.

No. 47,349.—SYLVENUS WALKER, New York, N. Y.—*Lock for Piano Forte.*—April 18, 1865.—This invention consists in substituting for bolts with a hooked end, and which move out vertically and horizontally, a bolt with straight and parallel edges, which moves out diagonally, and which, when projected through the mortise of the catch plate, prevents said plate from being raised up, except it follows the overhanging inclined edge of the bolt, which it cannot do when attached to the lid of a piano.

Claim.—A lock constructed with the diagonal movement of the bolt B, substantially in the manner and for the purposes set forth.

No. 47,350.—ALBERT M. WHITE, Port Chester, N. Y.—*Breech-loading Fire-arm.*—April 18, 1865.—In this invention a pivoted rolling breech block swings through a mortise in the stock and contains the lock. The sliding bolt, by which the breech block is secured in position, is operated by a forward movement of the trigger, which, with the thumb-piece of the hammer, serve as levers for rotating and opening the breech. A folded spring, one end of which is pivoted to the swinging breech block, while the other or free end rests under the flange of the cartridge, serves as the cartridge retractor.

Claim.—First, operating the latch which holds the lock frame in position in the receiver by means of the trigger, substantially as above described.

Second, elongating the slot in the trigger which receives the joint pin *r* of the latch in a vertical or nearly vertical direction, so as to permit the trigger to have a vertical downward movement when it is pushed forward to draw the latch, substantially as above described.

Third, elongating the slot *c* of the fulcrum J horizontally to permit the trigger to move horizontally forward when unlatching the lock frame, substantially as described.

Fourth, the combination of the vertically-elongated slot *q* and the horizontally-elongated slot *c*, as arranged to permit the sere and the trigger to have a vertical, horizontal, and rotary motion when the latch G is thrown forward to release the lock frame, substantially as described.

Fifth, the spring cartridge shell drawer, connected with the swinging breech piece or lock frame by means of a pin *h* and slot or lock *f* in such manner as to preserve the connection while the pin *h* moves in a circle concentric with the pin J on which the breech swings, and the said drawer moves parallel, or nearly so, with the bore of the barrel, substantially as herein described.

Sixth, so combining and arranging the hammer and the trigger in a swinging breech piece or lock frame that the two may form arms of a three-armed lever, of which the attachment of the cartridge shell drawer forms the third arm, and of which the pin on which the trigger works is the fulcrum, whereby, with the thumb in front of the comb of the hammer, and the

fingers behind the trigger, the whole power of the hand may be applied to withdraw the cartridge shells from the barrel, substantially as herein specified.

Seventh, the sliding latch G and the stop *a* in combination with each other as described, as a means of forming a rigid connection between the hammer and trigger, whereby they are made to serve as two arms of a lever for the purpose of withdrawing the cartridge shell.

No. 47,351.—Benjamin Wieland, Orangeville, Ill.—*Harvester.*—April 18, 1865.—This invention relates to the manner of combining in a hand machine an adjustable platform with the main or handle frame and the cutting apparatus and its driving mechanism, as identified by the claim.

Claim.—The combination of the adjustable platform D, uprights B, and the endless sickle, constructed as described, and operated through the medium of the spur wheel *q*, pinion *p*, bevel gearing *o m*, shaft F, and polygonal pulley, as described and represented.

No. 47,352.—Daniel T. Brown, Newton, N. Y., assignor to James H. McWilliams, New York, N. Y.—*Padlock.*—April 18, 1865.—In this padlock there is a series of swinging tumblers, each of which being notched in the usual manner, and another tumbler having a stud upon it, which is pivoted to the swinging catch lever, and which, crossing the notched ends of the other tumblers, passes under and receives the nose of the hasp in a sort of notch in its upper edge. The catch lever and series of tumblers are cut out so as to permit the passage through them of a double-bitted key, which latter, on being turned, sets the tumblers, draws upon the catch lever and, consequently, upon the stub tumbler; the latter, owing to the outer inclined wall of its notch drawing against the inclined nose of the hasp, being gradually forced downwards until its stub enters the notches in the other tumblers, which permits the catch to disengage itself entirely from the nose of the hasp.

Claim.—First, a compound tumbler *f* swinging upon the bolt *d*, and acting in the manner specified, to retain the tumblers when unlocked, substantially as specified.

Second, projecting the bolts by the action of the spring, compound tumbler, and incline 4' substantially as specified.

No. 47,353.—Theodore Burr, Battle Creek, Michigan., assignor to himself and Smith M. Kellogg.—*Artificial Leg.*—April 18, 1865.—The nature of this invention consists in the use of a knife-edged joint for connecting the foot with the leg, thereby obtaining freedom of motion and obviating friction.

Claim.—First, the segment C constructed with the plates *c c*, and otherwise, substantially as described, for the purpose set forth.

Second, the combination of the parts F G *r*, constructed and applied so as to form a knife-edged joint, substantially as described.

No. 47,354.—A. C. Carey, Malden, Mass., assignor to Samuel A. Bradbury, Dorchester, Mass.—*Knitting Machine.*—April 18, 1865.—This machine knits a whole stocking—heel, toe, and all—and all of a mitten but the thumb. A thumbless mitten may be knit by itself, or a string of such mittens may be knit and afterward separated. There are two rows of needles, in each of which every needle acts independently of the other. The needles of one row are pushed forward successively far enough for the yarn from the thread guide to catch on their hooks, while the needles of the other row are forming loops preparatory to knitting. There is a self-adjusting compound weight which keeps the needles out of action until they are wanted, and which, as it falls in pieces, gradually lets on the needles, so to speak.

Claim.—First, a knitting machine so constructed as to be capable of knitting the closed end or tip of a stocking or other tubular article, in the manner and by the means substantially as described.

Second, the combination of the two rows of needles, in each of which every needle acts independently of the others, with the inclines A and A′ and the jack E, as and for the purpose substantially as herein described.

Third, the ring gear R, in combination with the moving arms *p* and *p′*, the cross-head *a*, the slide *s*, thread guide *g*, and the inclines A A′, substantially as and for the purpose described.

Fourth, the jack E for the purpose of pushing forward successively the needles of the right or left hand row, while those of the other row are forming the loops preparatory to knitting, substantially as described.

Fifth, the snail wheel N, in combination with the arms L L and the levers and connections by which it operates said arms. Also, the self-adjusting compound weight, as and for the purpose herein described and represented.

Sixth, in combination with a jacquard chain or pattern that has at times a revolving or forward motion independent of its frame, and at times an uniform backward and forward motion with its frame, a series of adjustable weights that are in active operation when the chain has its forward or rotary in connection with its backward and forward motion for the purpose of widening the work as it is being knitted, and that are in passive operation only when the chain has only an uniform backward and forward motion for continuing the work of uniform size or width, substantially as described.

No. 47,355.—WILLIAM HAMILTON, assignor to DAVID CARLISLE, St. Louis, Mo.—*Smoke Houses.*—April 18, 1865.—In this invention the products of combustion flow from fire-boxes through a perforated partition into chambers, one on each side of the smoke-house, which is arched over and extending the whole length, and each being about one-third the width of the house; thence they pass through the perforated sides of these chambers and up among the meats, &c. A ledge extends along the top edge of the smoke-chamber to catch the drippings from the meats, &c.

Claim.—Constructing the fire-box A outside of the smoke-house, in connection with the smoke-chamber B inside of the house, and the openings *t* and the plate *x*, substantially as described.

No. 47,356.—CHARLES B. HATFIELD, assignor to CHARLES EUGENE WOODMAN, Boston, Mass.—*Shoe Fastening.*—April 18, 1865.—This invention consists in the combination of a buckle with a catch or catch socket with a plate having a recess, and attached to the upper. The buckle is provided with a large or plated tongue, on the rear of which there is a pointed one. With this invention the buckle can be fastened while being fixed on the confining strap.

Claim.—The combination of the catch *f* and its socketed plate C, or their equivalents, with a buckle or strap holder.

Also, the arrangement of the pointed tongue *h* and the larger or plate tongue *g*, and the buckle frame *a*.

Also, the combination and arrangement of the pointed tongue *g* with the buckle frame *a*, the catch *f*, and its socketed plate C, or their equivalents.

Also, the catch socket recess *k* and its mouth *l*, as made with reference to the shank of the catch, and arranged substantially as described.

No. 47,357.—JOHN JACKMAN, Jr., assignor to the AMERICAN AUTOMATIC STOP MOTION COMPANY, Newburyport, Mass.—*Automatic Stop Motion for Steam Engines.*—April 18, 1865.—This invention consists of a trip lever, a governor, a button, and a spring, arranged in such a manner that when the engine is running at its regular speed, and the governor balls assume their normal condition, the trip lever acts on the shoe or catches, and the position and throw of the cut-off valve is regulated by the governor; but if the balls drop down from any cause while the engine is in motion, the combined action of the button and spring on the trip lever trips off the shoe or catches of the cut-off or valve, and the supply of steam is entirely shut off from the engine and its motion ceases.

Claim.—The combination of a spring *d* or *d'* and button *e* or *e'*, with the rod *a* or its equivalent, and with the trip lever B or inclined planes B' or their equivalents, and with the governor A, substantially as and for the purposes herein shown and described.

No. 47,358.—JOHN JACKMAN, Jr., assignor to the AMERICAN AUTOMATIC STOP MOTION COMPANY, Newburyport, Mass.—*Automatic Stop Motion for Steam Engines.*—April 18, 1865.—This invention consists in combining with a governor, a coupling sleeve with a dog let in crosswise of the same, and a supporting spring and button in such a manner that when the engine runs at its regular speed and the balls occupy their normal position, the connection between the valve and governor rod is not disturbed, and the valve remains open; but if from any cause the balls drop down, the dog will strike the button so that it is thrown back, and the sleeve is liberated from the rod of the governor, allowing the same to follow the action of the spring and close the valve and thus stop the motion of the engine.

Claim.—The sleeve D connected to the rod C of a governor, and locked to the same by a dog *a* in combination with a spring *d* and button *e*, constructed and operating substantially as and for the purpose set forth.

No. 47,359.—JOHN JACKMAN, Jr., assignor to the AMERICAN AUTOMATIC STOP MOTION COMPANY, Newburyport, Mass.—*Automatic Stop Motion for Steam Engines.*—April 18, 1865.—This invention consists in a spring and a suitable stop applied in combination with the governor shaft, and with arms mounted on a bar which turns in its bearings, and which, when it turns, causes said arms to come in contact with the catch bars and to liberate the same from the pins of the levers, shoes, or other parts of the engine, acting on the valve in such a manner that when the arms are turned to such a position that they do not interfere with the action of the catch bars, the spring is moved up on the rod and returned in this position by the stop, and the engine is allowed to run in its regular manner; but if from any cause the governor balls drop while the engine is running, the shaft of the governor liberates the spring, and the arms are turned, causing them to liberate the catch bars automatically and to stop the engine.

Claim.—First, the spring H applied in combination with the rod I, arms J, catch bars D D or their equivalents, governor A, and with a suitable stop, substantially as and for the purpose set forth.

Second, the adjustable cam *c* with an inclined plane, in combination with the lever K, notched disk *b*, spring H, rod I, with arms J, and with the governor and catch bars or their equivalents, constructed and operating substantially as and for the purpose described.

No. 47,360.—Chas. H. Johnson, assignor to himself and Chas. Eugene Woodman, Boston, Mass.—*Detachable Horseshoe Calks.*—April 18, 1865.—This invention consists in, constructing the calks with mortises to receive tenons projecting from the shoe, and mortises in the shoe to receive tenons on the calks at each side of the tenons on the shoe. The same are secured together by bolts running through the tenons into the shoe. The end of the projections from the shoe are cross grooved and the bottom of the mortises of the calks which receive the said projections have corresponding cross projections which fit each other so as to resist any lateral strain upon the calks.

Claim.—The arrangement and combination of the two tenons *c c*, and their mortises *b b*, or *b' b'*, on opposite parts of the calk and flange, with the shoe, the calk, and the flange.

Also, the combination of the relievo and incavo crosses *f g*, or their equivalents, with the calk, the flange, and the tenons and mortises of the calk and shoe.

Also, the combination of the lateral recess *d*, on the flange, and the corresponding projection *e* on the tenon, with the calk tenon, and flange applied to the shoe, substantially as specified.

Also, the arrangement of the fastening screw *h*, viz: so as to pass through the shoe and through the tenons, as set forth.

No. 47,361.—Alonzo R. Judson, assignor to himself, E. H. Clark, New York, N. Y., and James D. Gray, Brooklyn, N. Y.—*Apparatus for Cooling and Stirring Lard.*—April 18, 1865.—This invention consists of a tank within which are two vertical shafts, the said shafts being provided with radial arms or bars which are attached to the shafts near their upper ends. These bars are provided with arms which project downward. To the top of each shaft is attached a crank connected with the rods by means of which a reciprocating motion is given to the stirrers.

Claim.—The combination of the cranks H H, vertical shafts C C, radial arms D D, and stirrers F G, all constructed and arranged as herein described, so as to oscillate the said stirrers simultaneously in horizontal planes and in opposite directions as explained.

No. 47,362.—Wm. Mallerd, assignor to J. D. Alvord, Bridgeport, Conn.—*Regulator for Gas Burners.*—April 18, 1865.—This invention consists of a gas burner containing a regulator in the enlarged part. The regulator is made in two pieces. A diaphragm of flexible material is fastened to a ring which is held between the two sections of the regulator. To the underside of the diaphragm is attached a rod upon the lower end of which is secured an adjustable valve, and in the upper part of the regulator is a hollow screw. By means of these devices the position of the flexible diaphragm is adjusted.

Claim.—The employment of the independent ring in combination with the inner case and the diaphragm, substantially as herein shown and described.

Also, the combination of the diaphragm regulator with the diaphragm, substantially as herein shown and described.

Also, the combination of the said diaphragm regulator with the adjustable valve, substantially as herein shown and described.

No. 47,363.—Thomas Oliver, New York, N. Y., assignor to himself and William H. Farrar, Oregon.—*Lining Petroleum Barrels, &c.*—April 18, 1865.—In this invention the gelatinous extract of prickly pear (Opuntia Vulgaris) is mixed with whiting, lime, flour, bran, or other material, to the consistency of paint, and then applied to the inside of barrels. Over this, before it is dry, is spread a composition of glue, molasses, isinglass, and shellac; other vegetable extracts may be used instead of that of the cactus.

Claim.—First, a preparation composed of the juice of the prickly pear, or other gelatinous plants, mixed with lime, plaster of Paris, flour, bran, or other similar substances, as a priming or preliminary application to the inside of barrels or other vessels, as and for the purposes set forth.

Second, the combination of a first and second application to the inner surfaces of barrels or other vessels, as described.

Third, the application of the ingredients herein described, when incorporated in one composition, and applied substantially as and for the purposes herein set forth.

No. 47,364.—Benjamin C. Phelps, Wethersfield, Conn., assignor to himself and Frederick H. Williams, Hartford, Conn.—*Fruit Picker.*—April 18, 1865.—In this invention a vertical blade is fixed to the end of the handle and against this blade another is caused to work like a pair of shears, the movable blade being operated by a cord and spring. The stem of the fruit is cut, the fruit falling into a pocket attached to the top of the pole.

Claim.—A vertical blade C', upon the shank D, in combination with the vibrating spring lever blade F H C, basket B E, handle A, and cord G, when constructed and arranged substantially as described.

No. 47,365.—G. Adolph Reidel, Philadelphia, Penn.—*Low-water Indicator for Steam Boilers.*—April 18, 1865.—This invention consists in the arrangement of a receiver for the feed water, in such a manner that when the water in the boiler gets below a given point the

communication therewith is cut off from the receiver above it, where it had been forced by the steam in the boiler, and the water passes down a connecting pipe and the receiver is emptied. The position of the receiver is changed by the weighted lever, which change of position sets a pump in motion, and a new supply is forced into the boiler. An alarm whistle is attached to the receiver in such a way that, as its position is changed, the valve of the whistle is opened and an alarm sounded.

Claim.—First, the oscillating receiver C, combined and arranged with the boiler A, substantially as described and for the purposes specified.

Second, the jointed pipes D and E, arranged and operated substantially as described.

Third, the combination of the weighted lever H, with the receiver C, substantially in the manner described and for the purpose set forth.

Fourth, the combination and arrangement of the conical valve N, and whistle O, or other alarm, substantially as described.

No. 47,366.—JOHN A. SEAVEY, assignor to himself and EDWARD S. HUTCHINGS, Kennebunkport, Maine.—*Trace Connection.*—April 18, 1865.—This invention consists of two pieces, one to be attached to the trace, the other to the whiffletree: the latter is formed with a vertical eye opening into a locking notch made transversely across the head. A screw projects down from the head to enter the thill or shaft. By pressing the head of the shank through the eye, and turning the head, the spring draws it into the notch and thus holds the two parts.

Claim.—As my invention the breeching or trace connection as composed of the eye *a*, the shank *b*, the head *c*, the spring C, the head *g*, the passage *d*, the notch *e*, and the screw *f*, or the equivalent of the latter, the whole being arranged substantially as and so as to operate as specified.

No. 47,367.—FRANCIS BRESSON, Paris, France.—*Lubricator.*—April 18, 1865.—In this invention the end of the nozzle has a disk within it slightly concave on the under side and punctured at the end of the centre, the overflowing of which emits the drops through the puncture. The end of the tube fitting the periphery to be lubricated so closely as to permit no flow, except while the cylinder is in motion. Within the tube described there is another tube which ascends through the reservoir and through a packing at its top. The elevation and depression of this latter tube regulates the pressure of the atmosphere within the reservoir, and consequently the emission of the oil.

Claim.—The combination of the air-tight vessel A, with the pipes *b c* and I, substantially as and for the purpose specified.

Also, the combination of the air-tight vessel A, and stopper B, and pipes *b c* and I, substantially as and for the purpose described.

Also, in combination with the pipes *b c* and I, when applied to the vessel A, the vessel A, the concave cap *e*, substantially as and for the purpose described.

No. 47,368.—WILLIAM C. FULLER, London, Great Britain.—*Method of rendering Doors and Windows Water Tight.*—April 18, 1865; patented in England February 16, 1864.—The object of this invention is to furnish packing for making a close joint in closing doors, hatchways, portholes, deadlights in ships, &c., and the invention consists in making a solid bar of hard rubber, or other substance, and uniting it with a bead or strip of soft rubber.

Claim.—The employment of a rib, strip or bead of elastic India-rubber, chemically united to a harder surface, whether of vulcanite or brass, as herein set forth and described.

No. 47,369.—GEORGE GOLDENFINGER, Seloncourt, France, and J. LOUIS RICHET, Besançon, France.—*Winding and Setting Watches.*—April 18, 1865.—This invention consists in eliminating from the winding-up apparatus of a watch the fourth wheel, or, in other words, in doing away with cogged wheels in two directions—the vertical and the horizontal. The watch is wound up by means of a small shaft passing through its side and gearing with a wheel on the shaft which winds the motor spring. After being wound up the motor spring is disengaged from the winding apparatus by a recoil spring on the latter.

Claim.—First, combining with the wheels H and H′, which respectively control the movements of the watch hands and of the winding devices, a movable double pinion F upon a stationary shaft, which pinion can be set in and out of gear with either of said wheels, substantially as and for the purposes described.

Second, the combination with the wheels H and A′, of the movable pinion F, stationary shaft A, and spring clutch lever G, substantially as and for the purposes specified.

No. 47,370.—CHARLES EUGENE LAEDERICH, St. Imier, Switzerland.—*Winding and Setting Watches.*—April 18, 1865.—This is one of the "remontoir" or keyless watches, wound up by a shaft entering through the side. The device for winding up and those for setting the hands are located on the same side of the pillar plate, underneath the dial, and are arranged so as to admit of passing from one operation directly to the other by means of an adjustable pinion on the winding-up shaft.

Claim.—The above described arrangement and operation of the stem and its pinion with the train and other wheels, for the purpose and in the manner substantially as described and illustrated in the drawings.

No. 47,371.—James M. Jay, assignor to W. H. Alexander & Co., Canton, Ohio.—*Horse Rake.*—April 18, 1865.—This invention relates to the construction of the hangers, by which the rake is attached to the axle, being so arranged that the bars will swing into one of the curves of the hanger and the rake head into the collar.

Claim.—In combination with the bar D′ and rake head *d*, the S-shaped hangers *a*, so arranged that the bars will swing into one of the curves of the hanger, and the rake head into the other, substantially as and for the purpose described.

No. 47,372.—William H. Elliot, Plattsburg, N. Y.—*Breech-loading Fire-arm.*—April 18, 1865.—This invention consists in operating the brace of the swinging breech plate of a breech-loading fire-arm, when said brace receives the recoil of the charge from the breech plate and communicates it to the frame of the arm, independently of the pivot of the hammer. The brace between the hammer and the main spring is arranged so that in firing the spring first communicates its power to the brace and then through the stirrup to the hammer. The hammer thus operated upon is pivoted to the breech plate. The hammer and brace are locked by means of a notch in such position that the breech plate may be turned away from the chamber for the purpose of loading, and turned back again without danger of an accidental discharge of the piece.

Claim.—First, a brace, which receives the recoil of the breech plate and communicates it to the frame or other portions of the arm, independently of the pivot or bearing of the hammer, when said brace is operated by the hammer, substantially as herein specified.

Second, the arrangement of the brace *e* between a hammer and main spring, when said hammer and brace swing upon separate pivots, substantially as herein described.

Third, operating the brace *e*, by means of a hammer which is pivoted to a breech plate, substantially as herein specified.

Fourth, the employment of lock notch *w* for locking the brace out of the way of the breech plate, substantially as set forth.

Fifth, so arranging the full-cock notch *v* upon the hammer that the brace *e* will still support the breech plate when the hammer is cocked for firing, substantially as herein shown and described.

Sixth, passing the pivot of the hammer through the hubs of the breech plate, substantially as and for the purpose described.

Seventh, the combination and arrangement of the auxiliary spring *i*, the half-cock notch *u*, and trigger *h*, substantially as and for the purpose set forth.

No. 47,373.—G. Adolph Riedel, assignor to A. Merritt Asay, Philadelphia, Penn.—*Car Springs.*—April 18, 1865.—This invention consists of a nest of springs confined between plates, and held in position by means of clamp bolts projecting from each of the said plates, and of such length as not to meet until after considerable compression of the said springs. The central spring of the nest is made stiffer than the rest for the purpose of supporting them under extraordinary pressure, and is surrounded by a metal tube of such length so as not to interfere with a due, and at the same time to prevent an undue, compression of the said central spring.

Claim.—First, the tubes J, combined with the head plates A B and arranged and operating in relation to the springs C F substantially as herein before described and for the purpose set forth.

Second, combining and arranging the spring C′ with the tube J, substantially in the manner and for the purpose above set forth.

Third, constructing the combining spring G of a twin shape bar or plate, substantially in the form represented in Fig. 4, when operated as described for the purpose set forth.

No. 47,374.—E. P. Allyn, North Canaan, Conn.—*Slide for Extension Table.*—April 25, 1865.—This invention consists in having a series of slides, of malleable cast-iron or other metal, and fitted together by means of dovetail projections, grooves, and stops, whereby a durable slide is obtained and the annoyance occasioned by the shrinking and warping of wooden slides avoided.

Claim.—A slide for extension tables, manufactured of malleable cast-iron or other metal, with its parts fitted together by the dovetail projections and recesses, and provided with stops, substantially as herein described.

No. 47,375.—Ira Almy, Farmer, N. Y.—*Coffin Handle.*—April 25, 1865.—The plate is provided with a flange which bears against the bottom of the coffin and is provided with pins which penetrate the wood. On the upper part of the plate is a thumb-screw, by which it is retained against the side of the coffin, and by this means the plate can be readily attached or detached from a coffin when desired.

Claim.—A detachable coffin handle, secured to a coffin through the medium of a plate applied in the manner substantially as shown and described.

No. 47,376.—James Arkell, Benjamin Smith, and Adam Smith, Canajoharie, N. Y.—*Paper Bag.*—April 25, 1865.—This invention consists in making or preparing paper bags in

such a way as to give to them, at their proper ends, a flexible character, so that, when properly filled with flour or other substance, the sides of the bags, at the proper ends, will come together after the manner of the sides of a cloth bag.

Claim.—As a new article of manufacture a quadrangular paper bag, with a double bottom produced by folding and pasting in the particular manner herein described.

No. 47,377.—JOHN BAIRD, New York, N. Y.—*Steam Engine.*—April 25, 1865.—This invention consists in the arrangement of condensing horizontal engines for driving propellers in such a manner that the condenser is attached directly to the cylinder head and at the same time acts as a guide for the cross head. An aperture is formed through the condenser at right angles to the axis of the cylinder, through which the shaft passes, and the piston is furnished with two piston rods, between which the shaft also passes. There are two or more pairs of these engines which are placed athwart ship, with their connecting rods working toward the centre, and a propeller is placed upon each side of the stern port, so that the engines upon one side of the ship work the propeller on the opposite side. Pillow blocks are arranged at the side of the condenser and fastened thereto by wrought iron rods designed to allow for any spring that there may be in the timbers to which the engines are attached.

Claim.—First, a horizontal engine, provided with a box framing near and attached to the cylinder, and containing vertical pumps, substantially as described, said framing also constituting the condenser, or the channel ways thereof.

Second, a horizontal engine, having a box framing, containing pumps and an independent pillow block framing, when the latter is combined with the former by wrought-iron rods, substantially as described and for the purpose specified.

Third, arranging engines, having the characteristics set forth in the second claim, on opposite sides of a vessel, when such engines have openings through the framing for the passage of a propeller shaft or shafts, substantially as hereinbefore described.

No. 47,378.—CYRUS BALDWIN, Manchester, N. H.—*Table Writing Desk.*—April 25, 1865.—This invention consists in combining with a table a writing desk. The desk is pivoted beneath the top of the table, and swings out for use when desired.

Claim.—The combination of the table and writing desk, when arranged to operate substantially as set forth.

No. 47,379.—G. BALDWIN, Bluffton, Ind.—*Hay Rack.*—April 25, 1865.—This invention consists in the application to a hay rack of two parallel bars, having rods passed through the same, and attached to the sills at the bottom. The said rods have at their upper ends threaded screws, to admit of nuts being put on after the bars are secured in their place. By screwing said nuts down firmly on the top of the load, an uniform pressure is exerted from top to bottom in all parts of the load, thereby preventing the strain on the rack and avoiding the inconvenience to the driver of having a binder pole in the centre of the load.

Claim.—The binder B and C, or their equivalent, for the purposes set forth.

No. 47,380.—L. B. BARTON, Metamora, Ill.—*Cultivator.*—April 25, 1865.—This invention relates to cultivators of that class in which the ploughs or shovels have a lateral adjustable movement, in order that they may be made to conform to the sinuosities of the rows of plants, and cast up the earth to the same or cast it therefrom without the liability of ploughing out the plants or injuring the roots thereof.

Claim.—The hinged or jointed frame E placed within the main frame A, as shown, in combination with the laterally swinging shovel or plough standards *g g*, levers J J, with stirrups K K attached, and the curved or bow-shaped bar M, all arranged to operate substantially as and for the purpose herein set forth.

No. 47,381.—W. W. BATCHELDER, New York, N. Y.—*Coal Oil Burner.*—April 25, 1865.—This invention consists mainly in the employment in a gas burner of a combination of a tubular wick-holder, a gas chamber, a perforated plate, and a heat conductor projecting downwards into the wick.

Claim.—The employment, in combination with a tubular wick-holder and vapor or gas-generating and air-mixing chamber, of a perforated plate, or the equivalent thereof, together with a metallic or other heat conductor or conductors projecting downwards and dripping into the wick, substantially in the manner herein described, for operation as herein set forth.

No. 47,382.—J. J. BAUSCH, of Rochester, N. Y., assignor to BAUSCH & LOMB, of Rochester, N. Y.—*Microscopes.*—April 25, 1865.—This microscope is capable of being closed in compact form, so as to be carried in the pocket; and to this end the object piece is connected with the eye piece by a spring in such a manner that the latter may be shut within the former by the compression of the spring, and separated from the former by the extension of the spring at a distance just equal to the focus of the lens.

Claim.—The combination of the object piece A, eye piece B, and spring C, substantially as and for the purpose herein set forth.

No. 47,383.—Charles F. Baylor, Clinton, N. J.—*Churn.*—April 25, 1865.—This invention consists in the application to a churn of pulleys placed within the framing of the same, having a belt passing around them and connected to a block placed at one end of the pitman sliding within a grove in one side of the framing, the other end of the pitman being attached to the crank. The crank being turned, operates by means of the belt, the vertical dashers sliding in grooves made in the framing.

Claim.—The combination of the belt and rollers, substantially as described, with the slides S and T attached to the dasher shafts, and the block or attachment J deriving its motions from the hand crank and its connections, as described and represented.

No. 47,384.—Adolph Behr and W. J. Ward, Black Hawk, Colorado.—*Shaking and Rocking Table for Amalgamating Gold, &c.*—April 25, 1865.—This invention consists of a sheet of amalgamated copper or brass, bent in such a manner as to form a furrow with projecting ribs. This sheet is secured to wooden sides, and the whole is suspended by rods and operated by an eccentric or cam.

Claim.—A shaking or rocking table, with amalgamated copper or brass riffles or grooves, which may be charged with more or less additional quicksilver, alone or in connection with one or more wooden riffles or grooves, in the shape and manner above described, or constructed in any manner, substantially the same, which will impart to substances suspended in water both the sifting and splashing motion which throws and forces the particles in contact with the amalgamated surface of the copper or brass riffles or grooves.

No. 47 385.—J. B. Bennett and James S. Gibbs, Buffalo, N. Y.—*Manufacture of Soap.*—April 25, 1865.—This invention consists in agitating and commingling, by any suitable machinery, the ingredients used for making soap in a closed vessel while under heat and pressure sufficient to insure the desired new combinations, and produce cheaply and quickly a uniform good quality of soap.

Claim.—The agitation and commingling, by any suitable machinery, of the ingredients used for making soap in a closed vessel while under heat and pressure sufficient to insure the desired new combinations, and produce cheaply and quickly a uniform good quality of soap.

No. 47,386.—E. F. Bishop, Burton, Ohio.—*Straw Cutter and Feed Mixer Combined.*—April 25, 1865.—This invention consists in the arrangement and combination with a straw cutter of a feed-mixing apparatus, composed of a vertical shaft extending down within a receptacle attached to one of the front legs of the machine and a little below the level of the same, the said shaft having arms placed thereon for mixing the food. Extending down to this receptacle are a couple of spouts attached to the machine, one from the mouth and the other from the side from under a hopper, whereby the food is conveyed into the said receptacle and mixed.

Claim.—The special arrangement of the hopper H, mixer F, shaft *d*, within its arms *f*, and spout *g*, in combination with the straw cutter when operating conjointly, substantially as and for the purpose set forth.

No. 47,387.—Louis Boudreaux, Thibodaux, La.—*Press.*—April 25, 1865.—This invention consists in the employment of toggle levers and a windlass so arranged that the press may be used in either a vertical or a horizontal position, and by any convenient power.

Claim.—In combination with the toggles I I and beater H, the shaft C and jacket F, so constructed as to be coupled and uncoupled by the lever G, and adapted to permit the rope K to be unwound and the beater to be raised without reversing the motion of the wheel L.

No. 47,388.—Robert Briggs, Philadelphia, Penn.—*Coupling for Shafting.*—April 25, 1865.—This invention needs no further description than is made in the claim. The coupling is divided, and has slots and bolts as there mentioned.

Claim.—The construction of couplings for shafts of a cylindrical casting or forging C, with a slot or opening *n* along one side, and clamped together by bolts *b*, as described.

No. 47,389.—Daniel J. Browne and Cyrus W. Baldwin, of Boston, Mass.—*Galvanic Battery.*—April 25, 1865.—This battery consists of an electro-negative plate, consisting of a square rod or prism formed of hard gas coke placed within a cell of unglazed pottery. This cell is placed within another cell, and within the outer cell and around the inner are radially arranged the electro-positive plates, consisting of bars of wrought or malleable iron. This arrangement renders possible the employment of a large amount of surface in the positive cell, and in consequence effects the diminution of the number of cells required in a battery of given power, whereby expense of construction is lessened, and the increased positive surface is enabled to be brought near the negative surface.

Claim.—The arrangement of the separate iron positive bars or rods C C radially around and in combination with the carbonaceous negative plate D, substantially as and for the purposes herein specified.

No. 47,390.—J. D. BUTLER, North Adams, Mass.—*Engine for Operating Rock Drills.*—April 25, 1865.—This invention consists of three cylinders, with their pistons and tubular piston rods so arranged as to operate the clamps which hold the drill, and at the same time to operate the drill. Provision is made for partially releasing the hold of the clamp upon the drill when it strikes the rock, and at the same time prevent the too violent recoil thereof. Provision is also made for cushioning the piston of the main cylinder so as to regulate the force of the blow. The engine is automatic in its action, and is provided with supports extending from the lower part of the cylinder, upon which a crosshead, which guides the lower end of the drill, and to which the cam rod for moving the valve is attached. The drill passes through the centre of the tubular piston rod.

Claim.—The combination and arrangement of the piston E, the openings *c c'*, the piston rod F, its packing *b**, the piston G, and the openings *d*, with the cylinders K A, the tubular piston rods C D, and the hollow cones I and L, and the gibs J J, the whole being constructed in manner and so as to operate substantially as described.

Also, the combination of the crosshead Q and the slides Q″, constructed and operating substantially as described, with the drill N and the tubular piston C; and also the combination of the collar Q′ therewith, the same being for the purpose specified.

Also, the connection of the crosshead Q with the piston rod C, in such manner that there may be a freedom of transverse and rotary motion with reference to one another, as and for the purpose herein before described.

Also, the combination of the cushioning space *x* and the pist n extension *b″ b‴*, or their equivalents, with the port *r′*, arranged in the cylinder and with reference to such space, substantially in manner as specified.

Also, the construction of the cylinder A with the reduction of bore, as shown at *a a′*, and with the piston B, with the part *b b*, to operate in such reduction, the part *r* being disposed with reference thereto as specified.

Also, the combination of the spring M, the nut H, and the series of notches *h h*, or their equivalents, with the hollow cone I, the same being substantially as and for the purpose described.

Also, the combination of the segments P P′ of a conical ring, the cylinders *p p′* and *p″ p″*, the ring *p″*, and the hollow cones in the head A″ and the follower A‴, the whole being substantially as and for the purposes set forth.

Also, the combination of the spring W, the pin *w*, and the yoke V″, with the valve stem U and the slide bar V, constructed, arranged, and operating substantially as described.

Also, the combination as well as the arrangement of the piston E, the piston rod F, its packing *b**, and the piston G.

Also, the combination of the openings *c c* and *d*, the piston rods D F, arranged with a tubular space between them, the pistons E and G, and the packing *b**, the whole being arranged substantially as described.

No. 47,391.—M. C. CAMPBELL, Philadelphia, Penn.—*Artificial Skating Pond.*—April 25, 1865.—This invention consists in covering an ordinary floor with a composition of carbonate of soda and sulphate of soda. The two salts are mixed in equal proportions and melted. The composition is then poured upon the floor, which is divided by strips of wood into sections proportioned to the quantity of material prepared, the strips being removed after each section has become solid.

Claim.—The preparation of a surface with a congealed material or composition, substantially as described and for the purpose specified.

No. 473,92.—JAMES CHASE and WILLIAM S. LOUGHBOROUGH, Rochester, N. Y.—*Curtain Fixture.*—April 25, 1865; antedated April 15, 1865.—This invention consists in a bracket, with a guide loop for the cord, an oblong journal box or socket, with suitable stops, and in that class of curtain fixtures in which the gravity of the curtain causes it to lower, and the adjustability is regulated by a single cord.

Claim.—The combination and relative arrangement of the guide loop *i* on the bracket *b* with the spool and oblong journal socket *c* and stop *e*, the parts being constructed and operating in the manner and for the purposes shown and described.

No. 47,393.—JOHN CHILLCOTT, Brooklyn, N. Y.—*Apparatus for obtaining Extracts from Vegetables, &c.*—April 25, 1865; antedated April 20, 1865.—This invention consists of a vessel A within another vessel B, leaving a steam chamber between the two. The vessel A is provided with a man-hole and cover, and also with perforated shelves, on which the vegetables are placed. Steam is admitted into the steam chamber by means of a pipe, and from the steam chamber into the vessel A by means of a pipe. The extracts obtained are drawn off through a pipe E.

Claim.—First, subjecting the substances to the action of heat in a steam-tight chamber or box, in which they are separated by perforated shelves, and in which they are surrounded by an atmosphere of steam, but protected from direct contact with the steam during the whole or any portion of the extracting process, substantially as herein described.

Second, providing between such chambers a connecting steam pipe F, by which steam can be admitted among the substances under treatment during any stage of the process, substantially as herein specified.

No. 47,394.—JOHN CHILLCOTT, Brooklyn, N. Y.—*Process for preparing Grain for Distillation.*—April 25, 1865; antedated April 15, 1865.—This invention consists of a steaming vessel, with a perforated partition, upon which the grain is placed and subjected to the action of steam until it begins to soften and swell; it is then allowed to fall out through a door into the hopper and between rollers.

Claim.—First, the process of preparing grain for distillation by steaming and crushing it between rollers, substantially as herein described.

Second, the combination of the steaming vessel A, perforated pipe *d*, hopper B, and rollers C C′, substantially as and for the purpose set forth.

No. 47,395.—H. M. CLAFLEN, Cleveland, Ohio.—*Mode of Splicing Timbers.*—April 25, 1865.—This invention consists in a mode of joining or splicing timbers together, whereby the fibre of the wood is not injured or its strength impaired, so as to make a safe splice for any wooden structure.

Claim.—First, the knobbed plates C′, as and for the purpose set forth.

Second, the knobbed plates C′, in combination with the link C, or its equivalent, substantially as and applied to the purpose specified.

No. 47,396.—JOHN W. COCHRAN, New York, N. Y.—*Breech-loading Fire-arm.*—April 25, 1865.—The barrel of the arm swings horizontally on a vertical pivot, and is held in its closed position by a transverse spring catch at the breech. The improvement consists in placing a sliding pin behind the spring catch in such a manner as to come in contact with the hammer, and thus prevent it from striking the cartridge until the said catch is sprung into its place on the accurately closed breech of the barrel.

Claim.—The safety pin *h*, applied and operating substantially as herein described, in combination with the hammer and with a spring catch applied to lock the barrel opposite the breech, as herein set forth.

No. 47,397.—WILLIAM COES, Worcester, Mass.—*Horse Shoe.*—April 25, 1865.—This invention consists in providing the shoe with a toe-piece or cap to fit over the toe of the hoof, and having the shoe pointed at its sides, and the rear part of the latter provided with lips and a catch or fastening, all arranged so as to admit of applying or removing the shoe without the use of nails.

Claim.—The bars A C C, connected by joints and provided respectively with a toe piece or cap B and lips D D, and the bars C C, constructed or secured by a suitable catch or fastening, substantially as and for the purpose herein set forth.

No. 47,398.—STILLMAN COOPER, Antwerp, N. Y.—*Mop Head.*—April 25, 1865.—This invention consists of a fixed portion composed of a rod bent so as to form three sides of a quadrangle, and curved in order to attach it to a handle. A jaw is pivoted to the fixed portion, between which the mopping cloth is placed, and can be adjusted by means of a slot and notches to different thicknesses of cloth, and held in position by rings.

Claim.—The fixed or permanent jaw A, provided with oblong slots *h h* and notches *d d*, in combination with the movable or adjustable jaw B, provided with pins *g g* and teeth *e*, and the sliding collars C C, fitted or placed on the sides *c c f f* of the jaws, substantially as and for the purpose set forth.

No. 47,399.—ERASTUS CROOKER, Buffalo, N. Y.—*Oil Ejector.*—April 25, 1865.—This invention consists in covering the steam pipe with gutta-percha or other equivalent material fitting closely to the pipe in combination with an ejector and discharge pipe.

Claim.—A steam pipe covered with gutta-percha or other equivalent material fitting closely thereto, in combination with an ejector or discharge pipe, substantially as and for the purpose set forth.

No. 47,400.—JAMES DONNELL, Allegheny City, Pa.—*Device for Well Boring.*—April 25, 1865.—The object of this invention is to cause a drill in the operation of boring artesian wells to turn through a given arc of a circle at each stroke, by a mechanical contrivance connected therewith, which operates to turn the tool first as it is completing its downward stroke and prevents its turning back or dropping into the hole or indentation made by the preceding stroke.

Claim.—The combination of the two toothed rings, the teeth of which have one side parallel and the other side at an angle to the axis of the rings, with the bevelled arms *o o′* of a shaft which has a reciprocating motion between the rings, for the purpose of producing an intermittent rotary motion of the shaft or rings, according as one of them is fixed and the other capable of rotation at each stroke of the shaft; the length of the arc of motion at each half stroke being regulated by the number of teeth in each of the rings, substantially as herein before described.

No. 47,401.—HENRY EARL, Edwards, N. Y.—*Sap Pans.*—April 25, 1865.—This invention consists of a pan provided with partitions forming a continuous winding passage for the sap. The sap is received in one pan at the centre of another pan through a supply pipe

which is surrounded by a steam pipe. The said steam pipe is connected with a cover of the steam box, which is directly under the main pan. This pan is provided with partitions similar to those in the first named pan, and the sap flows from said pan into another pan. A gate is placed in the latter pan to prevent the unfinished sap from being drawn off with the sirup. The steam pipe inclines from the centre to the side of the pan in order that the condensed steam may not flow back into the steam box.

Claim.—First, the combination of the receiving pipe A with the steam pipe D, substantially as and for the purpose set forth.

Second, the combination of the movable pan H with the pipes A and D, substantially as and for the purpose set forth.

Third, the combination of the steam box K with the movable pan H, substantially as and for the purpose set forth.

Fourth, the combination of the main pan M with the steam box K, substantially as and for the purpose set forth.

Fifth, the combination of the slide or gate *o* with the main pan M, substantially as and for the purpose set forth.

Sixth, the winding arrangement or channelling the pan, by means of which the sap, being admitted at the central or hottest part of the pan, is conducted to the outer or cooler parts of said pan substantially as described and for the purposes set forth.

No. 47,402.—E. D. EASTWICK, Baltimore, Md.—*Process for Treating Sirup and Saccharine Solutions.*—April 25, 1865.—This invention consists in the use of an acid, an acid salt, or neutral salt, that will decompose the coloring matter in sirup, &c. The acid or salt is added in such quantities as may be required or until no further change is produced. The sirup thus treated may be either stirred until the change is produced, heated, or boiled, until the decomposition is effected.

Claim.—The use of acids, acid salts, or neutral salts, for the purpose of decomposing and altering the coloring compounds in molasses and analogous sirups, the products of mother liquor remaining after crystallization of the sugar manufacture or refining.

No. 47,403.—R. EGAN, Brooklyn, N. Y.—*Awl.*—April 25, 1865.—This invention consists in the manner of fastening an awl into the haft. A metal socket piece forms the ends of the haft, which is attached by a stout tongue screwed into the wooden haft, the socket having an internal screw thread formed therein which receives the threaded shank of an awl.

Claim.—First, constructing awl hafts in the manner substantially as above described.

Second, in combination with the screw threaded socket piece B, constructed as specified.

Third, forming a screw thread upon the shank of the awl as and for the purpose set forth.

No. 47,404.—WM. EMRIS and H. J. BOSWORTH, Hudson, Mich.—*Sawing Machine.*—April 25, 1865.—This invention consists in attaching a bent lever to the side of the sawing machine, with the lower end bent so as to project under the arm that works the saw, so that by throwing the lever one way it raises the saw, and by releasing the lever the saw will be free to fall. This lever is held in place by contact with a spring having notches in it, so that it holds the lever when the lever is operated to slide in the spring into the notches.

Claim.—The lever S in combination with the spring V, when constructed and operated substantially as and for the purpose herein set forth.

No. 47,405.—JOHN EVANS, New Haven, Conn.—*Drop Hammer.*—April 25, 1865.—This invention consists in the method of attching the connecting rod of the hammer to the crank of the driving wheel, by which a variation in the length of stroke of the hammer is permitted to allow for the varying thickness of the work it is intended to operate upon.

Claim.—The combination of the connecting rod with the hammer when they are constructed and attached, substantially as herein described.

Second, the combination of the connecting rod with the crank pin, when they are constructed, arranged, and fitted for adjustment substantially as herein described and set forth.

No. 47,406.—W. R. EVANS and L. D. BENNER, Thomaston, Maine.—*Pencil and Eraser.*—April 25, 1865.—This invention consists of a holder having an eraser in one end and a pencil in the other, arranged with bayonet joint catches.

Claim.—The combined pencil and eraser above described, constructed substantially in the manner above set forth.

No. 47,407.—WM. L. FABER, New York, N. Y.—*Smelting Copper Ores.*—April 25, 1865.—This invention consists in roasting and pulverizing the ores several times, and then roasting it at a low heat until nearly all the sulphur contained is converted into sulphuric acid, which combines with the oxides of the metals, and until nearly all the acid has been driven off by the heat of the roasting. Common salt is then added, the quantity being four times as great as the weight of the arsenic and antimony combined contained in the ore. The whole is roasted again at a low red heat, gradually increasing the temperature to a higher range and maintaining it at this until the operation is finished.

Claim.—The within described process for expelling antimony and arsenic from copper and copper ores by roasting with some substance developing chlorine during the process of roasting, substantially as herein set forth.

No. 47,408.—Austin W. Field, Vergennes, Vt.—*Carriage Jack.*—April 25, 1865.—This invention consists in the employment of two parallel slides fitted in a suitable stock or standard, and having a lever placed between their upper ends, all being arranged in such manner that the device may be readily applied to axles of any height, and the latter elevated and secured in such a position with facility to enable the wheels to clear the ground or floor, so that they may be removed from the place on the axle for lucubrating purposes.

Claim.—The stock or standard A, perforated sliding bars B B, and lever D, in connection with the pin E, all arranged substantially as shown and described, to form a new and improved carriage jack.

No. 47,409.—Jacob Fox, Philadelphia, Penn.—*Coal Breaker.*—April 25, 1865.—This invention consists of a stationary hopper in which the coal to be broken is placed, vibrating plates, to which picks are attached, the said picks being made of hard wood or metal, and being moved in a reciprocating horizontal direction by the vibration of the plates, caused by the action of a system of eccentrics and shafts moved by a pulley or crank.

Claim.—First, a stationary hopper B B, adjustable at the bottom to regulate the size of coal, substantially as described and for the purpose specified.

Second, the vibrating plates *c c* in combination with picks D D, substantially as described and for the purpose specified.

Third, a stationary hopper B B, with picks D D, in combination with vibrating plates *c c*, or their equivalents, as and for the purpose specified.

No. 47,410.—J. Fraser, Buffalo, N. Y.—*Mode of Treating Oil Wells to Remove Paraffine, Tar, &c.*—April 25, 1865.—This invention consists in forcing hot water, petroleum, naphtha, &c., down into the well to render the paraffine fluid and dissolve it.

Claim.—The method of treating petroleum wells with hot liquids for the removal of obstructions composed essentially of paraffine, substantially as set forth.

No. 47,411.—C. O. Furbush, Machias, Me.—*Apparatus for Delivering Paper from Printing Presses.*—April 25, 1865.—This invention consists in the attachment of nippers to bars moving on endless bands, so that cam wedges can open or shut the nippers at proper intervals.

Claim.—The bars D E, provided respectively with jaws *c d*, the projection *f*, and pin *e*, in combination with inclined planes *g g*, the spring F, and bolt C, by which the jaws are opened and closed at the appropriate times to receive, clasp, convey, deliver, and return, substantially as above described and represented.

No. 47,412.—Frederick A. Giles, New York, N. Y.—*Winding and Setting Watches.*—April 25, 1865.—Watches constructed on this system are wound by means of an arbor passing through the stem or pendant of the watch and permanently attached thereto. But one wheel and two pinions are employed in addition to the ordinary gear of the watch, and the ratchet clutch commonly employed in watches of this construction is dispensed with, as is also the minute wheel.

Claim.—The combination of the wheel C, having two series of teeth *a* and C, turning on a fixed pivot *n*, the two pinions *b d* movable lengthwise upon the arbor, the spring *f*, and the sliding pin *h*, the whole arranged and applied in relation to the wheel A and the cannon pinion, substantially as herein set forth.

No. 47,413.—H. A. Gouge, Brooklyn, N. Y.—*Ventilator.*—April 25, 1865.—At a convenient point in the wall and near the floor of an apartment is an aperture, opening into a small chamber outside the room in which a gas jet or lamp is burned. The products of combustion, rising into a small conical shield, circulate around it and up into a pipe inside another and larger pipe. By the heat a circulation is caused to flow through the aperture and along with the products of combustion. Near the ceiling is another opening in the wall, likewise connected with the inner pipe. By means of doors in both apertures the circulation can be controlled at will.

Claim.—First, the ventilating apparatus described, with the several parts arranged and acting together substantially as set forth.

Second, the combination of light F, flues B and C, and ventilator E, constructed and arranged substantially as and for the purposes described.

No. 47,414.—Thomas Graham, Philadelphia, Penn.—*Coffin.*—April 25, 1865.—This invention consists in attaching two vessels to the opposite interior sides of a coffin in such a manner that they may be readily detachable therefrom. These vessels are open at the top, and are filled with alcohol previous to the deposition of the corpse in the coffin. After such deposition and the closing of the coffin the alcohol evaporates, and the vessels may be removed.

Claim.—The vessel G, containing alcohol or other equivalent fluid, and arranged in a coffin so as to be detachable therefrom, as set forth, for the purpose specified.

No. 47,415.—F. B. GREEN, Seneca Falls, N. Y.—*Grape Wire Support.*—April 25, 1865; antedated April 17, 1865.—This invention consists of an axis adjustable upon a frame which turns down and rests on the ground during winter. By this device all strain is taken off the vine and its root.

Claim.—Making the frame or support B adjustable vertically between the posts A A by means of the adjusting holes and pins *d f*, or equivalent, the whole arranged, combined, and operating substantially in the manner and for the purpose herein set forth.

No. 47,416.—N. GROH, Helenville, Wis.—*Roofing Composition.*—April 25, 1865.—This invention consists of a composition of asphalt, iron filings, wood ashes, and hydraulic cement.

Claim.—A roofing compound, made of the ingredients herein described, and mixed together about in the proportion and substantially in the manner herein set forth.

No. 47,417.—JOHN H. HAMAKER, Frease's Store, Ohio.—*Grain Separator.*—April 25, 1865.—This invention consists in connecting the carrier with the close and open portions together, and with transverse grooves and projections. The straw and grain are carried forward and upward on a single carrier by imparting to the carrier a rapid vibratory motion by means of double sets of cranks and an auxiliary connecting rod.

Claim.—The construction of the carrier, with the close and open portions together, with transverse grooves *a a* and projections *d d*, substantially as and for the purpose herein specified.

Also, conveying the straw and grain forward and upward on a single carrier, by giving the said carrier a rapid vibratory motion through the means of double sets of cranks and auxiliary connecting rod, substantially as and for the purpose set forth.

Also, communicating the vibratory motion to the shoe directly from the vibrating carrier by means of the connecting rod G, or its equivalent, as herein described.

No. 47,418.—JAMES HANLEY, New York, N. Y.—*Lamp-shade Holder.*—April 25, 1865.—This invention consists in bending a wire so as to form a loop to hang loosely around the chimney, and then bending the two ends into chips for holding the shade.

Claim.—The making a ring attachment with clips for the purpose of holding the shade and connecting with the lamp.

No. 47,419.—AUSTIN S. HATCH, Addison, N. Y.—*Marine Propeller.*—April 25, 1865.—This propeller consists of two screws of ordinary form in conjunction with each other, but in reverse positions. The effect of this arrangement is stated by the inventor to be this: the water is laterally displaced by the forward screw, which is twisted in a direction to propel the ship backward; and this side motion is immediately checked by the rear screw, so that, in point of fact, no motion is imparted to the water, except a motion to the rear. The drums of the screws are tapered uniformly as one drum, and the hull of the ship is tapered to correspond both fore and aft.

Claim.—The combination and arrangement of the double screws or wheels C D, revolving in opposite directions, and the taper form of the hull or bottom of the vessel before and behind the said screws or wheels, and in combination of the form of their blades, substantially as and for the purposes herein specified.

No. 47,420.—JONAS HOOVER, Oskaloosa, Iowa.—*Removing Foreign Substances from Sugar.*—April 25, 1865.—This invention consists in moistening the sugar with a mixture of sweet milk and alcohol, and subjecting it to pressure. The sugar is then spread upon cloth, and the cloth piled one above the other, and the whole is again subjected to pressure.

Claim.—First, treating crude sugar to alcohol and sweet milk, substantially as and for the purpose specified.

Second, subjecting sugar to a second pressure between cloths, after the same has been moistened with alcohol and milk, and pressed once, substantially as described.

No. 47,421.—EMIL HUBNER, New York, N. Y.—*Implement for Cutting Rubber, &c.*—April 25, 1865.—This invention consists of an adjustable knife, which is secured to a head that slides upon a rule. The handle is fastened by means of a screw, which presses upon a friction plate, and secures the head at the desired joint. The said rule is attached to a stationary head, which is provided with a movable arm rest and a centre pin.

Claim.—First, an adjustable circular packing cutter, constructed as herein described, as a new article of manufacture.

Second, the movable head C, holding the knife *d*, in combination with the rule A, screw handle D and stationary centre *a*, constructed and operating substantially as and for the purpose set forth.

Third, the swivelling or stationary arm rest *b*, in the stationary head B, in combination with the centre *a* and adjustable knife *d*, constructed and operating substantially as and for the purpose described.

No. 47,422.—Henry Jackson, Brooklyn, N. Y.—*Stair Rod Fastening.*—April 25, 1865.—This invention relates to an improvement in the ordinary fastening hitherto employed for securing flat stair rods to the risers of the stairs, and it consists in the application of a spring to one of the buttons composing the fastening, whereby the rods are securely fastened, being prevented from casually slipping off from the buttons by a longitudinal movement.

Claim.—The spring D, dish E′, and the supplemental shoulder C, applied to one or both buttons, in connection with the flat stair rods, having its flanges *a* provided with curved notches *e e*, all arranged substantially as and for the purpose herein set forth.

No. 47,423.—Wm. H. James, Cincinnati, Ohio.—*Fire-Place.*—April 25, 1865.—This invention consists in the attachment of a cast-iron back to a cast-iron mantel, the lower part being elliptical in form, and the upper part being arched forward to meet the mantel. The gate is of a basket-shape, and made low in front; in the plate at the back holding the ends of the base are notches for air to pass up from the ash-pit, and throw jets upon the surface of the fire.

Claim.—As a new article of manufacture the fire-place composed of the elements A B C D E F and G, the same being formed, combined, and adapted to operate in the manner set forth.

No. 47,424.—Henry Johnson, Pittsburg, Penn.—*Steam Engine.*—April 25, 1865.—This invention consists in placing in the cylinder of the engine a short distance below its head a movable disc or piston, the cylinder being lengthened sufficiently to give room for the stroke of the piston below the disc, and causing the steam from the boiler to pass into and through the space between the cylinder head and the disc. The disc is placed in this position to prevent injury to the engine, in the event of the piston rising too high in the cylinder. In the event of such an occurrence, the piston strikes the disc, and forces it up in the cylinder in which it fits steam tight, and as the steam is in contact with the opposite side of it, it acts as a cushion for the piston, and prevents injury to the engine.

Claim.—The use of a movable disc or independent piston seated in the steam cylinder above the working piston, with a steam space between it and the cylinder head, through and into which the live steam from the boiler is caused to pass on its way to the steam chest of the engine, for the purpose of a steam cushion, and to increase the efficiency of the steam engine, substantially as hereinbefore described.

No. 47,425.—John F. Jones, Rochester, N. Y.—*Machine for Grinding Paper Pulp.*—April 25, 1865.—The object of this invention is to retain the water between the grinding surface, and thus keep the pulp from clogging. The bottom of the case is lightly inclined towards its outlet, the better to allow of the discharge of the pulp.

Claim.—The machine for grinding paper pulp having the grinding surfaces *d d* made dishing or inclined upward from the centre to the periphery, and used in connection with the case H, the whole arranged and operating substantially as and for the purpose herein set forth.

No. 47,426.—J. H. Jones, New York, N. Y.—*Gas Heater.*—April 25, 1865.—This invention consists in an inverted conical-shaped screw in the top of a tube, near the other end of which gas is admitted, and mingles with the air as it rises through the tube.

Claim.—The combination and arrangement of the concave or inverted conical-shaped screen C, and tube A, in connection with a gas jet or opening G, for the purpose herein set forth.

No. 47,427.—J. Kelley, Troy N. Y.—*Machine for Oiling Wool.*—April 25, 1865.—This invention consists in so constructing the can as to allow it to be closed air-tight at the top; a discharge pipe at its bottom supplies the cistern or tank, whilst another pipe extending from the top of the cistern above the oil line down into the cistern forms an air pipe. This pipe extends down as far as it is desired the oil shall rise in the cistern. When the oil rises to this level it closes the mouth of the air pipe, and the discharge of oil stops; thus an uniform level is kept up.

Claim.—The two rollers A A′, one of which dips in a cistern containing oil, while the other serves to spread the wool, when used in combination with a can C, and pipes *b c*, arranged substantially as herein set forth, for the purpose of keeping up a uniform supply of oil to the lower roller.

No. 47,428.—W. H. King, Troy, N. Y.—*Universal Chuck.*—April 25, 1865.—This invention consists in forming the chuck of two or more transverse sections connected by dovetailed grooves and slides, operated by screws, by which the centre of the face of the chuck when on the mandrel may be thrown out of line in the said mandrel, and be eccentric thereto.

Claim.—A concentric or other chuck, provided with one or more laterally adjustable plates, substantially as herein shown and described, for the purpose of converting a concentric chuck into an eccentric chuck, as set forth.

No. 47,429.—Ira Kinman, Freeport, Ill.—*Hanging Latching Farm Gates.*—April 25 1865.—This invention consists in adjustable hinges, operating on rings on the back post, and the combination of an upright bolt, with a movable latch, movable prop, and its staple.

Claim.—First, the arrangement and combination of the adjustable hinges P and K, operating on the rings H and I on the back post, as herein described and for the purposes set forth.

Second, the construction and combination of the upright bolt A, with the movable latch B, as operating on the staple E and movable prop G, as herein described and for the purpose set forth.

Third, the construction and combination of the self-acting prop G, and staple E, as herein described and for the purpose set forth.

No. 47,430.—G. F. Kolb, Philadelphia, Penn.—*Jewel Case.*—April 25, 1865.—This invention consists in a jewel case, which is made with a movable bottom. raised on opening the lid by a bent lever fastened to the lid. When the box is opened the bottom rises at an angle inclining forward.

Claim.—The within-described jewelry case, composed of the lower portion A, the upper portion or lid A′, the leaf B and spring D, the whole being constructed and operating substantially as and for the purpose herein set forth.

No. 47,431.—Albert Komp, New York, N. Y.—*Metallic Skeleton Hat Frames.*—April 25' 1865.—This hat frame is constructed of two iron hoops of skirt-spring wire; said hoops being connected by means of three or more vertical stays, the connection between the hoops and stays being effected by means of clasps, each clasp consisting of a horizontal part having flanges to enable it to clasp the hoop, and a vertical part having flanges also to enable it to clasp the vertical stay.

Claim.—Forming the frame for a hat body of hoop-skirt spring wire, by forming two hoops and by connecting the same with three or more vertical stays, by means of clasps formed of thin metallic strips, each of said clasps being shaped into a horizontal part O P, and a vertical part R, cut to the required shape and bent over and pressed to the joint, substantially in the manner and for the purpose substantially as described.

No. 47,432.—R. J. La Mothe, New York, N. Y.—*Fountain Pen.*—April 25, 1865.—The object of this invention is to carry a spring trough, which is for the purpose of carrying ink from the reservoir and handle, and the piston used to fill the reservoir is made a pencil holder.

Claim.—First, the spring ink-conveyor, formed as a trough, passing through an opening near the pen, in the manner and for the purposes specified.

Second, the pencil *x*, formed in the manner set forth, and combined with the plunger of the fountain pen as specified.

No. 47,433.—Andrew F. Lapham, New York, N.Y.—*Washing Machine.*—April 25, 1865.—This invention consists of a box placed on pivots so that it can vibrate with a rocking motion, in connection with a coiled spring, and with winged boards, to which are attached springs.

Claim.—First, the spring M, combined and arranged relatively to the rocking box D, and bed A, or its equivalent, substantially in the manner and for the purposes herein set forth.

Second, the hinged boards H H, and springs I I, in combination with a rocking box D, adapted for washing or churning, substantially as and for the purpose herein set forth.

No. 47,434.—A. P. Lighthill, Boston, Mass.—*Apparatus for Inhaling Vapors.*—April 25, 1865.—This apparatus is designed to be employed in the application of vapor to the nasal or aural passages for the cure of diseases of such passages, and it consists of a glass bottle through the stopple of which pass three tubes, one of which is designed to be taken into the mouth and the other two to pass into the nostrils. The bottle being filled with a suitable medicament to a height above the bottom of the mouth tube, (which passes into the bottle to any convenient distance,) when breath from the lungs is expelled into the bottle, passing up through the medicament it vaporizes some portion of it, and the vapor is conveyed to the nostrils.

Claim.—The inhalation apparatus, substantially as and for use in manner as described.

No. 47,435.—John B. Lindsay, Davenport, Iowa.—*Churn.*—April 25, 1865.—This invention consists in arming the blades of the dasher with leaves of metal, or other suitable material, set at right angles to them, and also in combining therewith the screw shank of the dasher.

Claim.—First, arming the blades of the dasher of the ordinary churn with leaves set vertically upon their upper faces, substantially as described.

Second, the combination of the twisted shank of the dasher with a dasher constructed of vertical and horizontal leaves and blades, substantially as described.

No. 47, 436.—C. B. Long, Worcester, Mass.—*Gear Cutting.*—April 25, 1865.—The nature of this invention is explained by the claim.

Claim.—A gear-cutting rule upon which is marked in figures the number of cogs of a given pitch which can be cut upon a given diameter of a wheel, substantially as and for the purposes described.

Also, making the first inch of the rule with a figure or figures to indicate the number of cogs of a given pitch which can be cut upon a wheel of one inch diameter, with allowances for pitch line, substantially as set forth.

No. 47,437.—DAVID LYMAN, Middlefield, Conn.—*Hay Spreader.*—April 25, 1865.—This invention consists in constructing the teeth so as to allow them to yield in an upward direction, by attaching them to a block which moves up and down in a slot in the teeth levers, and has a coiled spring inserted above it.

Claim.—First, in combination with the teeth for scattering the hay of a spring attachment, so arranged as to allow the teeth to yield upward in accordance with the irregularities of the ground, substantially in the manner herein set forth.

Second, the method herein described of attaching the teeth of hay-making or spreading machines to blocks, or the equivalents thereof, capable of sliding up and down, substantially as set forth.

Third, in hay-making or spreading machines in which levers are used having an up-and-down and back-and-forth motion, the teeth when constructed and combined with springs giving them elasticity both backward and upward, as described.

No. 47,438.—JAMES E. MACKERLEY, Paint, Ohio —*Photographic Name Plate.*—April 25, 1865.—This invention relates to a device to be used by photographers, the object of which is to secure, in addition to the photographing of the sitting person or of a picture or view, and upon one and the same negative plates, the full or any desired portion of the person's name, or the title of the picture view.

Claim.—As an improved article of manufacture, an adjustable photographic name plate, made substantially as herein shown and described.

Also, the employment, in combination with the said name plate, of the movable letters or cards, substantially as and for the purpose set forth.

No. 47,439.—ROSWELL MARSH, Steubenville, Ohio.—*Cultivator.*—April 25, 1865.—This invention consists in a cylindrical roller with wooden teeth, which is used in combination with clearing fingers arranged upon a bar over the roller.

Claim.—The combination of the rotating cylinder with the digging forks and the clearer, substantially as described and for the purpose set forth.

No. 47,440.—A. F. MCCRONE, Ellicott's Mills, Md.—*Railroad Car Brake.*—April 25, 1865.—The object of this invention is to provide a brake mechanism which shall be operated by steam from an apparatus in the locomotive, and under the control of the engineer, by which a series of bars, united by connecting links between the cars, and running the whole length of the train, shall be made to operate a series of brakes through the whole length of the train.

Claim.—The coupling and brake-operating bars, extending through the length of the train and operated by the steam from the engine, to rotate the pinions, to whose shafts are attached the crossheads, which connect by suitable rods and levers with the rubber bars, the whole described arrangement being constructed and operated substantially as described.

No. 47,441.—WM. V. MCKENZIE, Jersey City, N. J.—*Oil Press.*—April 25, 1865.—Several separate press boxes are combined in one press, the sides of the boxes being arranged to slide apart and together as desired. The top and bottom of each box is formed of a slide working in a longitudinal groove in its side. Each side is provided with mortises for the reception of the sliding top and bottom of its neighboring side when the sides are slid together. Each sliding top and bottom is provided with a longitudinal lip at one edge, which is received within a groove in the side. The press boxes are supplied with steam from a pipe running along the sides of the boxes, and communicating with each box by a branch pipe, which is made of such thin and elastic material that it may be moved to and fro with the side of its box, and thus complicated joints may be avoided.

Claim.—First, the combination of the separate slides D D and mortises *g g* with the sides B of the press boxes, when constructed and arranged to operate as herein specified.

Second, the lips *c*, in combination with the slides D, grooves *d*, and sides B of the press boxes, constructed and operating substantially as and for the purpose described.

Third, the pipes E F, with branch pipes *e f*, arranged in combination with the movable sides of a press, substantially as specified, so that said branch pipes retain sufficient spring to allow of the motion of the sides of the press boxes.

No. 47,442.—JOHN MILLER, Buffalo, N. Y.—*Beer Faucet.*—April 25, 1865.—The plug being of unequal diameter, permits the flow of beer around it and downward, and being pressed down, cuts off the flow and drives out with force through minute converging channels in the conical lower end of said plug a small quantity of liquid in the lower part of the barrel; the object being to excite the liquid already drawn.

Claim.—The combination with the plunger C of the valve nozzle F, discharge nozzle D, operating for the purposes and in the manner described.

No. 47,443.—Joseph A. Miller, New York, N. Y.—*Hot-air Furnace.*—April 25, 1865.—Passing through the top and bottom plates of the chamber, which receives the products of combustion from the fire chamber on the same plane, is a series of upright flues, through which air flows from a chamber below, up into the reservoir of hot air. Among these tubes are placed bricks or any incombustible substance, through which the products of combustion circulate, and passing into a space at the rear of the furnace, flow down into a bent pipe passing through the chamber below that containing the open mouth tubes, nearly to the front, and thence, by a bend downwards, back and out of the rear wall of the furnace.

Claim.—First, forming a heat reservoir between or within the tubes of a hot-air furnace by means of lumps or pieces L L of brick or other material which is a poor conductor of heat, so applied that the flame and heated gaseous products of combustion may circulate through interstices between the said lumps or pieces, substantially as herein specified.

Second, the arrangement of the horizontal flue C, drop flue I, forward and backward circulation pipe flue J, in combination with each other and with the cold-air chamber H, tube sheets D D′, air tubes G G, and air-distributing chamber E, substantially as herein specified.

No. 47,444.—Geo. E. Mills, New York, N. Y.—*Oil Ejector.*—April 25, 1865.—This invention consists in attaching to a cone-pointed perforated base a light corrugated pipe of metal for discharging the oil, and a pipe for carrying the air to the ejector, which consists of short pieces in very thin plain or corrugated tubes, the bottom piece being closed up at its lower extremity, and made conical to fit into the interior of the cone upon the outside. The ejector is formed in sections, so that the point of exit may be varied at any time by removing or adding these sections.

Claim.—First, the use of corrugated metal for tubing oil wells, the same being supported on a perforated bulb, and cone-pointed base, substantially as herein described.

Second, the tube C C′, put together in sections and secured by screws in sockets on the air-pipe E, so that the point where the air comes in contact with the fluid may be adjusted in height, as and for the purposes set forth.

No. 47,445.—Jarvis T. Mudge, Cleveland, Ohio.—*Washing Machine.*—April 25, 1865.—This invention consists in hinging a weighted lever to the side of the water receptacle, and providing the lever with tubes, through which the water passes upward.

Claim.—First, the plunger C, moving in a vertical plane upon the pivot or hinges *c′*, and operated by a system of levers, substantially as herein described.

Second, the use of the tubes C′, in connection with the plunger C, to prevent the water from overflowing and adding weight to the latter, as explained.

No. 47,446.—L. H. Olmstead, Newark, N. J.—*Ratchet Brace.*—April 25, 1865.—In this device the ratchet and stock are surrounded by a wide ring or cylinder, from each end of which project two wide arms, parallel to each other, and between which the handle is pivoted by a pin passing through the outer ends of said arms, the inner end of the handle being formed into a pawl, which passes through a slot in the ring for that purpose. The feed nut upon the top of the shank is a hollow cylinder, threaded in its entire interior to admit the male screw forward on the top of the shank, the balance of which, down to the handle, is reduced in size the thickness of the thread on top, allowing it to fit it snugly.

Claim.—First, the combination of the frame B and handle S of the ratchet brace, constructed and arranged substantially as set forth.

Also, making the main spindle of a ratchet brace with a part of the thread cut away between the socket for the drill and the upper end of the spindle, as shown and described and for the purpose set forth.

No. 47,447.—I. E. Overpeck, Overpeck's Station, Ohio.—*Manual Power.*—April 25, 1865.—This invention consists in the combination of two levers, one of the first and one of the second kind, both connected to the same crank by rods, which are jointed to their respective levers at a point lateral to, and at some distance from, a vertical line drawn through the centre of the crank shaft, to which they are attached. The said levers are so arranged above and below the said crank shaft as to be easily operated by both the hands and feet of one or two attendants.

Claim.—The arrangement of the connecting rods *c c*, at an angle to a vertical line drawn through the centre of the crank shaft of wheel *b*, to operate in combination with levers *d* and *e* of my manual power sawing machine, substantially as described, for the purposes specified.

No. 47,448.—C. C. Phelps, Janesville, Wis.—*Chimney.*—April 25, 1865.—This invention consists in constructing chimneys (of cast iron or its equivalent) in sections, the interior of the chimney being divided into four flues by means of cross-diaphragms. In the lower section of chimney is an ash-drawer.

Claim.—The construction of chimneys (of cast iron or its equivalent) in sections, substantially as described and for the purpose specified.

No. 47,449.—C. L. Pierce, Buffalo, N. Y.—*Shingle Sawing Machine.*—April 25, 1865.—This invention is designed as an improvement in dogs for holding shingles while they are

being cut into bolts, and it consists of a table upon which the block to be sawed is placed, a longitudinal slot being cut in the same for the saw to project through. Bolted to the top of the table is a hollow arched standard; near the top of which and across the same is a partition. On each side of the standard is a screw that carries two pairs of dogs; the said dogs are formed with right angled shanks, one pair of dogs at the bottom and one pair near the top of the same, the dogs projecting through slots that are cut in the standard. On top of these screws are keyed two gear wheels, one on each screw, and between these two wheels is another wheel that gears in the two latter wheels, the wheel being keyed fast to a shaft that projects through the top of the standard. On the other end of the shaft is secured a hand-wheel, by turning which to the right the upper dogs lower and the lower dogs rise, and thus engage the block in the top and bottom of the same.

Claim.—The combination of two pair of dogs, C C′, with the reciprocating table A, said dogs being so arranged as to clamp the block above and below upon each side of the saw kerf, in a manner to prevent the block from pinching or binding the saw, when constructed and operating substantially as set forth.

No. 47,450.—JOHN T. PLASS, New York, N. Y.—*Bread Cutter.*—April 25, 1865.—This invention consists of a knife and gauge, so arranged that when the slice is cut the action of the knife and lever operates upon the gauge so as to force it out of the way and to let the bread fall.

Claim.—The knife D and bar E, in combination with the automatically moving gauge J, all arranged to operate in the manner substantially as and for the purpose specified.

No. 47,451.—A. H. PLATT, Yellow Springs, Ohio.—*Coal Oil Lamp.*—April 25, 1865.—This invention consists of two perforated partitions, both convex downwards, the upper less convex than the lower; also in the combination of a flaring base, perforated partition, and deep flame opening operating together.

Claim.—The combination of the downwardly convex perforated basilar partition B and the perforated cap C, having a degree of convexity downward less than the former, substantially as and for the purpose herein specified.

Also, the combination of the flaring open base A, perforated partition B, perforated cap C, and deep flame opening *d*, arranged and operating together, substantially as and for the purpose herein set forth.

No. 47,452.—ALEXANDER F. PORTER, Philadelphia, Penn.—*Pump.*—April 25, 1865.—A large hollow piston is attached to a hollow piston rod. This piston has a concentric cylinder within it a little larger in diameter than the interior of the rod. Within this smaller cylinder a ball valve rests upon its seat at the bottom of the cylinder. Above the ball, when seated, are perforations in the small cylinder, through which water enters during the ascent of the cylinder, and during the descent thereof the water enters under and around the ball. The water enters the bottom of the main pump cylinder through a supporting leg lifting a puppet valve at the top of such leg, and enters near the top of the main cylinder through a cylinder supplied through a leg at the bottom thereof, an aperture near the periphery of the top disk of the piston admitting the current in the ascent of the piston.

Claim.—First, constructing and arranging a cylindrical double-acting pump, having inlet, through, and exit passages, substantially as herein described, and adapting the same to the raising of oil or other liquids from deep wells, as set forth and explained.

Second, fastening and supporting or securing a pump in a deep well, by accurately fitting it to the bore of said well and resting it upon legs or other supports at the bottom of the well, through which legs or support the liquid is drawn into the pump, thus rendering the pump firm and steady, preventing vibration, the opening of the joints, and other injurious consequences arising from instability, substantially as herein described and represented.

No. 47,453.—J. RANKIN, Detroit, Mich.—*Balanced Slide Valve.*—April 25, 1865.—This invention consists of a lever which is pivoted to lugs raised on the back of the valve. One end of this lever rests upon the knife edge of a standard which is stepped in the valve seat. To the opposite end of the lever a link is pivoted, whose opposite end is pivoted to another lever having its outer end resting upon another knife edge fastened to the steam chest at the end opposite to the one in which the standard is placed. The opposite end of the last named lever rests in a slot in the piston rod, the cylinder of which is centrally located on the steam chest cover, with its lower end opening into the steam chest. As steam is admitted into the chest it presses down upon the valve and up upon the piston, which last named force is transmitted through levers and links to the valve and counteract the downward pressure upon it, thus rendering it a balanced valve.

Claim.—The lever D, rocker E, link F, and lever G, in combination with the piston H and slide valve B, constructed and operating substantially as and for the purpose set forth.

No. 47,454.—HENRY REDLICH, Chicago, Ill.—*Printing Press.*—April 25, 1865.—The object of this invention is to print, in a small way, labels, tickets, circulars, &c. It is accomplished by a system of cylinders for type, inking, and pressure.

Claim.—The peculiar manner of constructing the type cylinder O, to wit, by means of the metal heads F F′, wooden heads *e e′*, nuts G G, wooden segments *f*, and removable types *h*, substantially as herein described.

No. 47,455.—JOHN H. REED, New Haven, Conn.—*Car Coupling.*—April 25, 1865.—This invention consists in a combination of devices designated in the claim, and will be understood by reference to the engraving.

Claim.—The combination of the bar B B with lever E E′ and catch *b*, when constructed, arranged, and fitted to produce the required results, substantially as herein set forth and described.

Second, the combination of the bar B B with the levers *l* and *k* and the springs *a a*, when constructed, arranged, and fitted for uncoupling, substantially as herein described.

Third, the combination of the lever E E′ with the coupling pin *c* and link F, when constructed and fitted for use, substantially as herein described.

Fourth, the combination of the lock lever G with the bar B B, when combined, and made to operate substantially as herein described.

Fifth, the combination of the draw head with the link F, when constructed and fitted for use, substantially as herein described.

Sixth, the combination of the link *t* with the pedal *g*, when fitted to prevent coupling, substantially as herein described.

No. 47,456.—J. WYATT REID, New York, N. Y.—*Horse Power.*—April 25, 1865.—This invention consists in constructing and arranging the several parts of the device in such a manner that power may be taken from different shafts having different degrees of speed, and machinery driven with a greater or less application of power, as circumstances may require.

Claim.—The combination of the master wheel F, arms *a a′*, stationary tubular spindle A, platform G, shaft C, and one or more horizontal shafts, H, when constructed and arranged to operate as herein specified.

No. 47,457.—GEO. S. RICE, New York, N. Y.—*Manufacture of Hard Rubber Articles.*—April 25, 1865.—This invention consists of a mode of making watch cases, &c., of hard rubber. The case is made of five parts, namely, the covers, the basil, the shank, and ring. The inner side of each cover is provided with an annular groove containing a metallic ring, to which is attached a portion of the hinge, the other part of said hinge being secured to the besel. The said besel has a thin overhanging rim, sufficiently elastic to allow of the glass being inserted in the same manner as in the ordinary gold cases. The shank is rivited or screwed into the besel, and the interior of the case is coated with lacker or varnish, to prevent the sulphur from injuring the metallic watch movements.

Claim.—As a new article of manufacture, first, watch cases or lockets made of hard rubber or vulcanite, in the manner herein before set forth.

Second, in vulcanite watch cases or lockets, the method of securing the hinge, substantially as described.

Third, in vulcanite watch cases or lockets, forming an annular groove, with a thin overhanging rim for the inserting and holding the glass, substantially as set forth.

Fourth, the method of securing the hard rubber shank to the hard rubber basil, substantially as described.

Fifth, in combination with vulcanite watch cases or lockets, the use of varnishes, in the manner and for the purpose set forth.

No. 47,458.—E. A. L. ROBERTS, New York, N. Y.—*Exploding Torpedoes in Artesian Wells.*—April 25, 1865.—This torpedo is intended to be used for blasting and similar purposes within artesian wells, and consists of an elongated or tubular magazine of powder, provided at its upper end with a tubular neck containing a nipple for carrying an ordinary percussion cap and a plunger held slightly above the cap by an India-rubber sleeve, securely attached to the tubular neck and the plunger. A perforated weight allowed to slide down the wire by which the torpedo is suspended, causes the explosion at any desired position of the torpedo by falling on the plunger.

Claim.—First, the priming chamber *b*, in combination with the flask plug and nipple, substantially as described.

Second, the arrangement of the tube *f* or its equivalent, composed of India-rubber or other similar material, with the guard *d* and bolt *e*, substantially as described, in combination with the flask.

No. 47,459.—JOHN B. ROOT, New York, N. Y.—*Vibrating Piston Engine.*—April 25, 1865.—This invention is designed as an improvement in that class of steam engines in which the power is communicated to the crank through pistons which are vibrating in their motion, and which move through an arc of a circle. Its novelty consists in arranging the crank directly between the vibrating piston and within the cylinder, and in so arranging the connections between the said pistons and the cranks that each piston, though being only single-acting, may act upon the crank during more than half of each revolution of the latter, thereby

avoiding the occurrence of any dead point in the revolution of the engine. It further consists in the connection of the side-packing strips of the piston with the end strips by means of pins and slots, in combination with the mortise and tenon joints in the same.

Claim.—First, the combination of a cylinder, A, of a form substantially as herein specified, and two vibrating pistons, D D*, occupying reversed positions within the said cylinder, and both connected with the same crank shaft, to operate substantially as herein set forth.

Second, so arranging the connections between the said vibrating pistons and the crank, that each piston, though being only single-acting, may act upon the crank during more than half of each revolution of the latter, substantially as herein described.

Third, the crank E′, arranged directly between the vibrating pistons and within the cylinder of an engine, substantially as herein described, with a separate and independent connection with each piston, substantially as herein set forth.

Fourth, the connection of the side-packing strips *c′* and end-packing strips *c2* of the piston, by means of pins *f* and slots *e*, in combination with mortise and tenon joints, substantially as and for the purpose herein specified.

No. 47,460.—Wm. F. Rossman, Hudson, N. Y.—*Coffee Settler.*—April 25, 1865.—This invention consists of a tin cylinder, the lower half of which is perforated and the bottom convex, to be placed in the coffee-pot. It has on its top a hollow cone, the apex terminating in a handle, beneath which is suspended a funnel reaching down about half way into the cylinder. The cone and funnel are connected, and may be detached from the cylinder at pleasure. The apparatus has feet on which to rest in the coffee-pot, and by the current produced by boiling, it is alleged that all the grounds, &c., will collect in the cylinder and the cone and funnel will prevent their escaping again.

Claim.—First, the hollow cone A, with open base, having funnel B attached, in combination with the perforated cup C, all constructed substantially in the manner and for the purpose set forth.

Second, the open space between the base of the cone A and top or upper margin of funnel B, and for the purpose described.

No. 47,461.—D. Sargent, New York, N. Y.—*Street Sweeping Machine.*—April 25, 1865.—This invention relates to certain improvements in that class of sweeping machines in which a rapidly revolving brush is used for the purpose of throwing dirt on an inclined scoop.

Claim.—The adjustable scoop E and box I, in combination with the three-armed hangers F, adjustable brush H, rock shafts *t t*, hand-levers *t′ t′*, movable pinion *c*, and wheel B, constructed and operating substantially in the manner and for the purpose herein set forth.

No. 47,462.—Frederika Schenkl, Boston, Mass., administratrix of the estate of John P. Schenkl, deceased.—*Adjustable Tension Device for Sewing Machine Shuttle.*—April 25, 1865.—The shuttle driver carries a spring lever, one end of which, during its traverse, is acted on by an adjustable incline, which causes the other end of the lever to enter a hole in the shuttle and press upon a spring shell in such a manner and at such time that the required degree of tension of the thread is effected when the needle-thread is drawing into the work.

Claim.—The arrangement and combination of mechanism herein described, when made to operate substantially in the manner and for the purpose specified.

No. 47,463.—Chas. Slater, Brooklyn, N. Y.—*Ships-of-War.*—April 25, 1865.—This invention consists in the application of certain punches, augers, and a hinged keel turning up upon the fixed keel. The scuttling augers are transverse. This, or athwart ship, actuated by steam.

Claim.—First, the hinged adjustable keel C, applied in combination with the main keel B, of a vessel, and with the vertically-adjustable rods *f*, and ropes *c*, all constructed, arranged, and operating substantially as and for the purposes specified.

Second, the combination of the punches H, piston H′, and steam cylinders H2, constructed, arranged, and operating as and for the purposes specified.

Third, the scuttling augers I, applied in combination with the horizontal shaft *i*, and adjustable gear *p2*, substantially as and for the purpose herein shown and described.

No. 47,464.—R. L. Smith, Stockport, N. Y.—*Machine for Attaching Revenue Stamps.*—April 25, 1865.—The gummed stamps are passed between rollers, moistened, attached by a plunger, and torn from the sheet at one operation.

Claim.—First, the rack bar F, and gate D, with feed rollers G G, and subjected to the action of a weight or spring, in combination with an automatic stop *c*, and plunger H, all constructed and operated substantially as and for the purpose set forth.

Second, making the rack bar F removable, substantially as described, so that the machine can be readily adjusted for stamps of different width.

Third, the oscillating arm *i*, and tappet *m*, in combination with the stop *c*, rack bar F, handle *l*, and plunger H, constructed and operating substantially as and for the purpose specified.

Fourth, the rollers G G, arranged in the longitudinal sliding gate D, and operating in

combination with the absorbent roller *q* and plunger H, substantially as and for the purpose set forth.

Fifth, the employment of the elastic spring block *p*, or its equivalent, in combination with the plunger H, and metal edges *o*, substantially as and for the purpose described.

No. 47,465.—HENRY W. STEPHENSON, Cincinnati, Ohio.—*Barrel-rolling Device.*—April 25, 1865.—This invention consists of a pair of handles, of a convenient size, crossed and pivoted at the point of crossing like a pair of scissors. The opposite ends of the handles are each provided with a disk of a diameter somewhat less than that of the common barrel-head. And each disk is pivoted at its centre to its supporting arm, and so as to revolve freely. The handles are of such form that the disks may be applied one at each end of a barrel, and pressed closely against it, whereupon the barrel may be easily rolled away.

Claim.—The frames A A, crossed and pivoted at *c*, in combination with the disks B B, the whole constructed and arranged so as to be capable of being applied to a barrel, substantially as and for the purpose described.

No. 47,466.—JAMES H. SWING, Cleveland, Ohio.—*Coffee Pot.*—April 25, 1865.—Around the top of a filter is a band embracing the cover and forming an open receptacle; in the centre of the cover of the filter is a hole with a flange, extending down into a cap secured to the under side of the cover, so as to leave a space all round and under the lower edge of the flange, thereby making a water joint. The bottom is perforated and sets in a vessel with perforated sides, which fits into the top of the coffee pot. There is a detachable perforated plate, to be placed inside the filter on the grounds. The flow of the coffee from the filter into the pot is regulated by raising or lowering the filter in the vessel in which it sets.

Claim.—First, the cup *d*, and flange *b*, in combination with the rim *l*, annular chamber and section A, as and for the purpose set forth.

Second, the disk *h*, strainer *f*, and filter B, in combination with the section A and cover D, as and for the purpose herein described.

No. 47,467.—CHARLES N. TAYLOR, Upton, and ELIJAH J. H. HOLMES, Dedham, Mass.—*Forge.*—April 25, 1865.—In this device the whole bottom of the forge is formed of a grate extending from side to side, the whole surface of which where needed can be used at once. For work requiring a fire of a particular shape, as for heating tin, a plate having an annular opening through it of the proper size is laid over the grate, which excludes the passage of the air, except at such parts as are needed. When a fire of round or square form is needed a plate with a corresponding opening is used.

Claim.—The improved forge herein described with its removable plates, for the purpose of adapting it to the size and shape of the article to be heated.

No. 47,468.—J. C. THOMAS, Redpoint, Md.—*Corn Planter.*—April 25, 1865.—This invention consists in a hollow draught wheel with triangular seed chambers that deposit the seed in the hollow cultivator teeth as each fork of the chamber passes the same; also in a circular rack, sector, lever, and arm for adjusting the machine.

Claim.—First, the forked seed-box B, in combination with the wheel A, and the hollow tooth C, when constructed substantially as and for the purpose specified.

Second, the circular rack A, sector B, lever C, and arm D, when the several parts are constructed and arranged substantially as and for the purpose herein set forth.

No. 47,469.—HOPKINS THOMPSON, New York, N. Y.—*Reclining Chair.*—April 25, 1865.—This invention consists in the arrangement and combination of a hinged brace bar and clamp fastening or holder, with a hinged reclining chair. The hinged brace bar is jointed to the foot support, and the whole operated by the screw on the outside of the chair.

Claim.—In combination with a clamp fastening on the stationary part of a reclining chair, a hinged brace bar jointed to one of the movable parts of a jointed reclining chair, substantially as described, whereby the movable parts may be clamped and braced rigidly to the stationary parts, substantially as set forth.

No. 47,470.—B. M. VANDERKEER, Clyde, N. Y.—*Lock.*—April 25, 1865.—The important feature of this lock is a rectangular block lying in the central part of the case and pivoted to one of the outer plates, which, when turned in the manner of a turn button, to a certain position will be in line with the latch bolt, the latter entering but a short distance within the case and against the inner end of which the end of the turning block abuts. Within the turning block there is arranged a small sliding bolt which may be thrust forward into the end of the latch-bolt, and thus prevent the button from being turned, while the latter prevents the latch from being forced inwards. The lock has but one keyhole, although two keys are used, one, namely, for turning the pivot and thus withdrawing the small bolt, and the other for turning the block crosswise of the case so as to permit the drawing back the latch-bolt.

Claim.—The traverse or key dog, with its bolt, operated by its keys in locking and unlocking the latch, together with the spring catch in the head of the latch, which holds the dog in its linear or central position after having accomplished its mission.

No. 47,471.—S. VAN HENNICK and T. ALLEN, New York, N. Y.—*Pulley Block.*—April 25, 1865.—This invention consists in providing a pulley block with an extra or supplemental sheave of larger diameter than the others, and provided with an independent chain or rope for the purpose of gaining power in operating the blocks or in raising weights.

Claim.—The combination in a single pulley block of the small sheave *a a'* for carrying the rope or chain B to which the weight is attached, and the larger sheave *a''* attached rigidly to the first two, and carrying the rope or chain D to which the power is applied, all the parts being constructed and arranged to operate as herein specified.

No. 47,472.—JOHN M. VAN NEST, Clayton, Iowa.—*Sheep Tender.*—April 25, 1865.—This invention consists in providing a sheep rack at one end with two feed boxes, each having a sliding door in connection with troughs running longitudinally with the frame of the rack, the object of the doors being to graduate the feed to the troughs as they are drawn out from the frame for the purpose of feeding the sheep.

Claim.—The combination of the sliding trough with the granary, the latter being provided with a spout or opening to discharge the feed into the trough, which moves beneath it, substantially as described.

No. 47,473.—ZALMON B. WAKEMAN, Rockford, Ill.—*Vehicle.*—April 25, 1865.—This invention consists in a rod attached at one end near the end of a tongue, and at the other end to a spiral spring, situated under the forward axle. This spring admits of sufficient vertical movement of the tongue, and at the same time relieves the draught animals of its weight. To prevent the sudden lateral jerking of the tongue, and the consequent liability of injury to the draught animals, two helical springs are attached to the rear side of the forward axle, one on each side of the bar connecting the two axles, and they bear against angular pieces of metal projecting from each side of said connecting bar.

Claim.—First, in combination with the tongue C the swivelled box or bearing F, having an eye or aperture increasing in size from front to back, and employed to receive and support the end of the brace rod E, substantially in the manner and for the purpose explained.

Second, the combination of the coiled spring E' and nut I with the supporting rod E, the nut permitting the spring to be contracted and expended at will for the purpose of varying the position of the tongue.

Third, the tube I' employed in combination with the spring E', rod E, tongue C, and nut I, substantially as herein set forth.

Fourth, the adjustable springs K K, adopted to operate in connection with the knuckles L L, in the manner and for the purposes set forth.

Fifth, the spring or springs J wrapped around the tongue rod, and with their ends secured under the tongue hounds, and the forward axle or sand board adapted for adjustment in any manner, and employed for sustaining the tongue C, as set forth.

No. 47,474.—G. W. WALKER, Boston, Mass.—*Stove.*—April 25, 1865.—This invention consists in the construction of a stove of sheet metal in a square or oblong form, with a sub-base separated from the main base by an air chamber or passage, which sub-base is connected with the interior of the stove by means of flues at the corners of the stove, said flues being made of the material of the outside of the stove body and of the sheets within the stove.

Claim.—A stove constructed with a sub-base separated from the main base by an air chamber or passage, and operating in the manner and for the purpose substantially as described.

Also, the contruction of a stove with flues formed of the material of the outside of the stove body, and of the sheets within the body, when such flues are arranged to convey the products of combustion to heat a hollow extension of the base in front of the stove.

No. 47,475.—EDWIN WASSELL, Pittsburg, Penn.—*Rolling Mill.*—April 25, 1865.—This invention relates to the mode of attaching or supporting the guide or cleaver, which is effected by hanging it to the lower end of a rod having a piston at its upper end, and which works in a cylinder hinged to a beam in front of the rolls. Beneath the piston-head is a spiral spring, and above it a screw, by which means the piston rod and the guide attached thereto is regulated in regard to the rolls. A flanged guide-roller, having the part between the flanges tapered, is employed to give the bar when resting thereon a lateral or sideways motion.

Claim.—The use of a flanged guide-roller placed in front of a pair of rolls, when such roller is tapered between the flanges, for the purpose of causing the iron bar to slide sideways when it drops out from one pass between the rolls to the proper position in front of the next adjoining pass, substantially as described.

Also, the use of a guide holder, consisting of the combination of a cylinder or box *d*, rod *c*, spring *i*, and pressure screw *f*, constructed substantially as and for the purpose hereinbefore set forth.

No. 47,476.—JAMES WATSON, Cliff Mine, Mich.—*Apparatus for Separating Ores.*—April 25, 1865.—This apparatus consists of a hopper which is provided with a trough at one side, and a chute which communicates with said hopper by means of an aperture, at the opposite side. A deflecting board is placed in the hopper directly opposite the trough, and at a short

distance from it, the said deflecting board extending to one side of the hopper. Below the hopper and communicating with it is a chamber with an opening closed by a gate; directly opposite this opening is a passage leading to a tube, which is provided with faucets and a water pipe entering below said faucets.

Claim.—First, the hopper A, provided with the deflecting board C, chute or trough D, and the opening *a* at the bottom, substantially as and for the purpose set forth.

Second, the chamber B below the hopper, communicating with the pipe or tube E, provided with one or more plugs or faucets, and having water admitted into it under pressure, substantially as and for the purpose specified.

Third, the combination of the hopper A, chamber B, pipe or tube E, provided with faucets or plugs, the deflecting band C, and chute or trough D, all arranged to operate substantially as and for the purpose set forth.

No. 47,477.—WILLIAM WEBSTER, Middletown, Ohio.—*India-rubber Packing Former.*—April 25, 1865.—This invention consists of a cylinder standing upon a projecting base, top edge of said cylinder being chambered. The packing rings are placed upon the cylinder, the metal ring being placed above them.

Claim.—The cylindrical packing former A for preparing India-rubber annular packings for sealing fruit cans, in the manner described and represented in the accompanying drawings.

Also, the pressure ring *x*, or its equivalent, in combination with the flange or base *a*, applied and used in the manner and for the purpose specified.

No. 47,478.—WILLIAM WESTLAKE, Chicago, Ill.—*Machine for Making Lanterns.*—April 25, 1865.—This device consists of a pair of disks placed upon an upright mandrel, adjusted at a suitable distance apart, and of the proper diameter, the bottom one being rebated on the periphery, so as to receive and hold, by means of clamps, the wire ring which constitutes the bottom of the frame or guards, and both disks being notched to receive at the proper place the longitudinal ribs connecting the bottom, middle, and top rings, and hold them securely while being soldered together.

Claim.—The former or device constructed substantially as described upon which to make lantern guards.

No. 47,479.—N. W. WHEELER, Brooklyn, N. Y.—*Tramway for Ferry Boats.*—April 25, 1865.—This invention consists in the use of a tramway of crescent form, so that wagons and other vehicles can enter the boat upon one of the horns of the crescent and leave the boat at the other without being turned round for disembarkation.

Claim.—First, in combination with the deck A and coaming D, the deflector or switch bar G, so arranged and operated as to slide the rear wheels outward and cause them to describe the larger curve, substantially in the manner and for the purpose herein set forth.

Second, in connection with the above, the employment of the perforated or roughened plates F F of hard material, combined and arranged to operate in connection with the deflector G, so as to afford a hold for the animals and provide for the lateral movement or sliding of the wheels, substantially as and for the purposes herein described.

No. 47,480.—N. W. WHEELER, Brooklyn, N. Y.—*Tubular Condenser.*—April 25, 1865.—This invention consists in forming the joints between the tubes and their sheets. The sheets are provided with holes of various diameters, the smaller portion lying on the inner side of the sheet, the larger in the centre, and the medium sized on the outer side. The largest or central portion receives a ring of some soft packing, through which and the inner portion of the hole the flue is passed, leaving the outer space in the bead to be closed by an annulus of well-seasoned wood, which encircles the tube, and is of sufficient diameter to fit snugly in the aperture in the flue sheet. By driving the annulus through its portion of the sheet and against the packing, a tight joint is formed; and the wood from which the annulus is made being previously thoroughly dried, it is alleged that it will swell in consequence of its contact with the steam and water, contract and expand them sufficiently to hold the packing in its position, and prevent any leaking.

Claim.—The improvement in condensers and analogous tubular constructions herein described, to wit, the employment of the soft packing G and driven annulus E, the latter holding itself in place and supporting and guiding the tube D and compressing the packing G, substantially in the manner and with the effect herein set forth.

No. 47,481.—N. W. WHEELER, Brooklyn, N. Y.—*Movable Berth.*—April 25, 1865.—This invention consists in a combination of devices by which sleeping berths can be temporarily set up and supported by the sides of the deck house, or other like deck structures.

Claim.—First, in the described combination with a vessel, the employment of the sockets D D and E E, stanchions F and H, the two or more berths C′ C2, and the free supporting stanchions I and K, arranged substantially as and for the purposes described.

Second, in connection with the above, combination of hooks, links, and stanchions, constructed and arranged to operate together substantially in the manner and for the purposes described.

No. 47,482.—N. W. WHEELER, Brooklyn, N. Y.—*Landing Platform for Steamboats and other Vessels.*—April 25, 1865.—This invention consists in a combination of devices by which a landing platform, one end of which being hinged to the vessel, is turned over and back, thus bridging over the space between the vessel and her landing pier or land.

Claim.—First, the construction and use of an adjustable bridge B permanently attached to a vessel A, and arranged to allow of its being turned in-board, and operated by the hoisting means in both positions, substantially in the manner as herein set forth.

Second, in combination with an adjustable bridge, the yielding and rolling hinges G A′ B′, arranged to operate in the manner and for the purposes substantially as herein set forth.

Third, the within-described arrangement of the jib stay H, continuations *h h*, and rigid post I, for the purpose herein set forth.

No. 47,483.—E. R. WILBUR, New York, N. Y.—*Bottle Stopper.*—April 25, 1865.—This invention consists of a tube and cork attached together by means of flanges. A longitudinal diaphragm divides the tube into two parts; part of the tube on one side of the diaphragm below the cork is cut away, and a part above the cork on the opposite side of the diaphragm is also cut away from just above the cork. The lower part of the tube is provided with an aperture in the side and a small aperture at the end. A cap is made to fit securely over the top of the tube.

Claim.—The bottle stopper above shown, constructed and applied substantially as described.

No. 47,484.—J. E. WILLIAMS, Xenia, Ohio.—*Railway Chairs.*—April 25, 1865.—This invention consists in supporting the points of rails by means of a two-part chair resting upon and bridging the space between two separate ties, with lips extending the entire length, and flanges extending below and falling between the ties, the parts being clamped and held by bolts or their equivalents. In combination with the foregoing is used a block of wood.

Claim.—First, supporting the joints of rails by means of a two-part chair resting upon and bridging the space between two separate ties, with lips *b b* extending the entire length, and flanges *c c* extending below and falling between the ties, the parts being clamped and held by the bolts *e e*, or their equivalents, substantially in the manner herein described.

Second, in combination with the foregoing, the block of wood *f*, for the purpose specified.

No. 47,485.—HENRY F. WILSON, Elyria, Ohio.—*Shield for Breaststraps.*—April 25, 1865.—This invention consists of reversed hooks, having their upper ends covered so as to correspond to the inner circle of the ring, for the purpose of giving the greatest possible length to the hooks, and at the same time admit the ring freely.

Claim.—The reversed hooks, having their upper ends covered so as to correspond to the inner circle of the ring, for the purpose of giving the greatest possible length to the hooks, and at the same time admit the ring freely, the whole being constructed and operating in the manner and for the purpose described.

No. 47,486.—T. WINSLOW, Cleveland, Ohio.—*Plough.*—April 25, 1865.—This invention relates to such a construction of a plough that, without changing the relative position of any of its parts, a deep or shallow furrow may be ploughed at pleasure.

Claim.—The herein-described construction of ploughs, the distinguishing feature being the relative position of the lower edge of the mould board to the land side, substantially as herein set forth, thus forming in one implement a common and subsoil plough.

No. 47,487.—O. R. BURNHAM, assignor to J. I. and J. O. WEST, New York, N. Y.—*Braiding Machine for Covering Skirt or other Wires.*—April 25, 1865.—By means of this improvement upon an ordinary braiding machine for covering flat wires, two wires lying face to face are simultaneously covered, the interlacings of the threads lying between the flat surfaces of the wires, the devices being such as to keep the wires separate or divergent from each other at the point where the braiding takes place, immediately above which they pass, united by such braided covering through a guide which yields to inequalities or to the overlapping ends of wires, and then between compressing guide rollers, which act against the edges of the covered wires in such a manner as to force the wires to wedge, thus tightening the braid.

Claim.—First, the uniting, by a braided covering, of the wires, held separately and apart until the point of braiding, and the bringing them together at the point so as to braid them just before or as they are brought together side by side or parallel, and then the twining them edge to edge during the continuous movement of the wires, so as to strain and tighten the braid upon the wires, as described.

Second, the construction and use of the guide and supporting pieces *b b*, with the apertures in the same for the passage of the wires, by which the wires are supported and directed to the point of braiding without interfering with the motion of the bobbins or threads, in the manner and for the purposes described.

Third, the guide piece *e*, constructed and operating in the manner and for the purposes described, by which the wires are brought and kept together, as they ascend, at the required

point for braiding, and at the same time the continuous and unobstructed passage of the wires and their joints is provided for as the braiding proceeds and is completed.

Fourth, the application and use of the pressure and delivery rollers, whether with or without the guide piece *f'*, combined with the apparatus above described, underneath, by the combined operation of which the wires are twined edge to edge by a gradual progress from their position of side by side, at the same time that they are conducted away as completed.

No. 47,488.—A. C. CAREY, Lynn, Mass., assignor to himself and GEORGE S. SULLIVAN, Boston, Mass.—*Knitting Machine Needle.*—April 25, 1865.—The object of this combination of the long flexible hook (instead of the usual short rigid hook) with the latch needle, is to enable it to make a finer or more even fabric, the angle made by the latch with the shank being reduced. The thread is also retained in the needle as long as may be necessary.

Claim.—The combination in a machine knitting needle of a latch with an elongated flexible hook that extends upwards nearly parallel with the shank of the needle, and to such a distance or length as to reduce the angle that the latch makes with the shank, thus forming a narrow or slim needle that can be used for fine work, substantially as herein described.

No. 47,489.—D. C. COLBY, assignor to himself, D. W. RAWSON, J. H. REDDINGTON, and THOMAS I. HARRIS, Claremont, N. H.—*Heating and Fuel Device.*—April 25, 1865.—This invention consists in placing a pipe concentrically within a stove-pipe so as to leave a space all around between them for the products of combustion to circulate. This inner pipe is intended to connect at both its ends with an apartment adjoining the one in which the stove is placed, and the air from the room enters the bottom of the inner pipe cold, and is delivered from the upper end hot; by means of an arrangement of dampers at both top and bottom of this pipe the circulation may be controlled. If desired, the inner pipe may be made directly up through the fire chamber of the stove before entering the stove-pipe; in that case the pipe must be made of cast instead of sheet-iron.

Claim.—The arrangement of the damper H, the pipe G, and the orifice *j*, on the upper end of the funnel B, the damper I, the pipe F, and the orifice *k*, on the other end, substantially as described, and the combination of the funnel B, thus provided, with the outer funnel A and the stove C, one or both, as and for the purposes set forth.

No. 47,490.—GEORGE C. DAVIES, assignor to OHIO EROLIN COMPANY, Dayton, Ohio.—*Cotton Press.*—April 25, 1865.—This press is constructed so that the platen can swing to either side and be out of the way while the press box is filled. It is a limited claim, confined to specific parts.

Claim.—First, the provision in a baling press of the screw B, winged nut C *c*, vertical guides D and *a*, toggles G G', rods F, platform E, and baling trunk H, in the described combination with the swinging platen I, the whole being arranged and operating substantially as set forth.

Second, the suspended platen or abutment I articulated to the frame by means of the links K K' and pintles L L', so as to be capable of being swung to one side for filling or charging the baling trunk, in the manner described.

No. 47,491.—J. T. EDSON, Stowe, Mass., assignor to himself and GEORGE L. CROSBY, Berlin, Mass.—*Game Boards.*—April 25, 1865.—This invention consists in having a groove surrounding an ordinary game board to receive the marbles used and convey them to a box beneath the board.

Claim.—The combination of the groove B and passage *b* leading therefrom with the game board A and the receiver *c*.

No. 47,492.—C. E. GAGE, assignor to C. DREW, Winona, Minnesota.—*Valve Gear for Steam Engines.*—April 25, 1865.—This invention consists in adapting the valve rods to constitute supports and guides for the cross-head which is attached to the end of the reciprocating bar, which receives its motion from the piston rod of the engine, and acts to open and close the valves at the proper intervals of time.

Claim.—The sliding valve rods 14 14, constituting supports and guides for the bar 7, which imparts movement to the valve rods by coming in contact with the shoulders 5 13, and thus effect the alternate opening and closing of the proper induction and exhaust parts.

No. 47,493.—ALONZO HICKS, Factoryville, N. Y., assignor to himself and L. JONES, New York, N. Y.—*Lamp.*—April 25, 1865.—This invention consists in the combination of a diaphragm, deflectors, guards, and wick tube.

Claim.—The combination of the diaphragm *d*, deflectors *i i'*, guards *f f*, and wick tube *c*, in the manner and for the purposes specified.

No. 47,494.—H. HOLT, assignor to W. W. LECOMBE, New York, N. Y.—*Composition for Preparing Ribbons for Hand Stamps.*—April 25, 1865.—This invention consists in applying an ink composed of aniline red or other aniline color, dissolved in glycerine, to the ribbon.

Claim.—The within described composition applied to a ribbon, substantially as and for the purpose set forth.

No. 47,495.—CHARLES H. JOHNSON, assignor to himself and C. E. WOODMAN, Boston, Mass.—*Horseshoes and Calks.*—April 25, 1865.—This invention consists in constructing the shoes with sockets, mortises, tenons, and shoulders of the calks, and bolting the flanges of the shoe and calks together, so that the calks are readily attached or removed.

Claim.—The invention of the fastening flange *a* and the mortise *b* with the corresponding socket *c* and tenon *d* of the calk, and with one or more bolts *a'* or equivalents, extending through the flange and the calk, substantially as specified.

No. 46,496.—H. LOEWENBERG, New York, N. Y., assignor to himself and EMILE GRANIER, Paris, France.—*Composition for Lining Oil Barrels.*—April 25, 1865.—This invention consists of gelatine, acetic or other acid diluted with water of sufficient quantity to cover the gelatine and sirup. Coloring matters may be combined with the composition if desired.

Claim.—The use of a compound of the ingredients herein described, viz: of glue, acid, and sirup, and mixed together substantially in the manner and about in the proportion set forth

No. 47,497.—W. ADOLF OTT, assignor to himself and HENRY JACKSON, Brooklyn, N. Y.—*Process for Treating Auriferous Ores.*—April 25, 1865.—This invention consists in the employment of a mixture of hypochlorous acid in extracting gold from auriferous ores, and particularly from pyrites containing gold.

Claim.—The use, in treating auriferous ores, and particularly pyrites containing gold, of hypochlorous acid, substantially in the manner herein set forth.

No. 47,498.—HENRY PENNIE and CHARLES CHINNOCK, assignors to themselves and LEVI BISSELL, New York, N. Y., and reassigned by L. BISSELL to said PENNIE and CHINNOCK.—*Feed Bag.*—April 25, 1865.—This invention is set forth in the claim.

Claim.—A feed bag or portable crib for a horse or other animal, so constructed that it may be at the same time suspended from the head and attached to or near the breast of the animal, and when so suspended and attached may have its bottom inclined downward toward or from the animal's mouth, by the downward and upward movements of his head, substantially as and for the purpose herein described.

No. 47,499.—ROBERT POOLE, assignor to himself and G. H. HUNT, Baltimore, Md.—*Food Water Heater.*—April 25, 1865.—This invention relates to the combination and arrangement of the parts, which consist of a vessel for the reception of a portion of the exhaust steam from the engine. Within this vessel is arranged a series of deflectors for the purpose of communicating the water as it passes from the induction pipe at the top of the vessel to the eduction pipe at the bottom thereof, the object being to present the greatest possible amount of water to the action of the steam for the two-fold purpose of condensing the steam and heating the water. The induction passage for the steam to the vessel is connected directly with the exhaust pipe of the engine, but is not so arranged as that all the steam therefrom is forced into it, but only so much enters as induced by the partial vacuum which may be produced therein. The water is taken from the instrument by a pump and forced into the boiler.

Claim.—The manner in which I have arranged and combined the tank A with regard to the inlet and outlet water pipes connected with it, the scatterer, and the branch pipe leading from the ordinary exhaust or waste pipe to its interior for the purpose of heating the water passing through said tank without interfering with the free escape of the steam through said exhaust or waste pipe, substantially as herein described.

No. 47,500.—J. SHEPARD, New Britain, Conn., assignor to himself and R. BUTLER, New York, N. Y.—*Fastening for Harness.*—April 25, 1865.—This invention consists of two curved side pieces connected at their ends by three cross-bars, the middle cross-bar being provided with a pin to receive and hold the ends of the straps.

Claim.—A strap fastening for harnesses and for similar purposes, composed of two curved side pieces *a a*, connected at their ends by cross pieces *b b' b''*, placed relatively with each other as shown, and the centre cross piece *b'* provided with central piece *c*, substantially as described.

No. 47,501.—E. TURNER, assignor to SIMON R. GOLIBART, Baltimore, Md.—*Floating Dock.*—April 25, 1865.—The object of this invention is to avoid the liability of straining the hull of a vessel during the operation of elevating it from the water for repairs or overland transportation, and also to avoid the necessity of sinking the docks or pontoons, and then pumping out the water from them for the purpose of raising a vessel. By this invention, also, the pontoon may be used as workshops for those employed upon the dock, and to elevate a vessel at pleasure to any desired height, so that the workmen can have access to any part of the hull and a steady foundation upon which to stand.

Claim.—First, so constructing a floating dock that a vessel may be raised bodily out of water and suspended between floats or pontoons upon vertically adjustable frames or elevators, substantially as described.

Second, the use of vertically adjustable frames D D, in combination with pontoons A A, and mechanism applied to these latter, which is adapted for adjusting the frames independently of each other or simultaneously, substantially as described.

Third, the employment of guides D′ D′ in conjunction with the elevating frames D D and A A, substantially as described.

No. 47,502.—A. TYRRELL, assignor to himself and K. FERRIN, Batavia, N. Y.—*Horseshoe.*—April 25, 1865.—This invention consists in forming a shoe with a semicircular recess or narrowing between the toe and heel on each side of the shoe on the inside, and an upward projecting flange on the upper inside of the heel, to press against and spread out the heel of the hoof when the shoe is spread for the purpose of curing contracted hoofs.

Claim.—A horseshoe constructed as described, with the recesses *a a* made at any point between the heel and toe, for the purposes specified.

No. 47,503.—F. L. M. DORVAULT, Paris, France.—*Capsules for Preventing the Soiling of Fire-arms.*—April 25, 1865.—This invention consists of a capsule made of gelatine, gum, and sugar, and containing grease or oil.

Claim.—The employment or use of self-discharging capsules, substantially as herein described, in combination with fire-arms to prevent them from soiling, as set forth.

No. 47,504.—L. MORGENTHAU, Mannheim, Baden.—*Medicated Candy.*—April 25, 1865.—This invention consists in heating the sugar until it melts, and while in this condition adding a small quantity of tartaric acid. The heat is continued until all the water is expelled from the sugar, and a mixture of Fichtennadel extract, Fichtennadel essence, and Fichtennadel oil is added and the whole poured upon a marble slab to cool.

Claim.—First, in combination of sugar with an extract from the young shoots of the pine tree, substantially in the manner and for the purpose herein set forth.

Second, the compound formed of the several specific ingredients in the proportions set forth.

No. 47,505.—Z. GASPARD, A. N. PETRONE ORIOLI, AMABLE ALFRED FREDET, and P. A. HENRI MATUSSIEVARE, Paris, France.—*Mode of Disintegrating Vegetable Substances for Paper Pulp.*—April 25, 1865.—This invention consists in subjecting wood, straw, &c., in the form of fine fragments, to the action of a bath, composed of nitric and hydrochloric acids. After the fragments have absorbed a quantity of acid equal to their weight, they are washed, reduced to pulp, washed again, and then bleached.

Claim.—The within described process for disintegrating vegetable materials by the application of aqua regia, substantially in the manner herein set forth.

No. 47,506.—GEORGE PARRY, Ebro Vale Iron Works, England.—*Manufacture of Iron and Steel.*—April 25, 1865; patented in England November 18, 1861.—This invention consists in a process for producing purified wrought iron, and hard or soft cast steel, in large masses, in an economical manner.

Claim.—The process above described, whereby purified wrought iron, and hard or soft cast steel, in large masses, is produced in an economical manner.

No. 47,507.—CHARLES T. ANDERSON, Clarksburg, Md.—*Churn.*—May 2, 1865.—This invention consists in connecting to a pair of bellows a handle and arm, through the medium of a link and cross-piece at one end of the arm, and at the other end is connected a dasher and dasher-rod, whereby a current of air is produced during the operation of churning. The said arm is made adjustable by means of holes and a pin, so as to increase or diminish the extent of vibration of the arm and motion of the dasher.

Claim.—First, the combination of the rod C, arm D, link G, and handle H, the parts being so arranged that the motion of the handle will be transmitted to both the bellows and dasher, substantially as set forth.

Second, in a churn of the description herein given, the pin *g* and perforations *d*, employed as and for the object specified.

No. 47,508.—JAMES G. ARNOLD, Worcester, Mass.—*Letter Envelope.*—May 2, 1865.—This invention consists in cutting the blank with rounded instead of notched corners, to allow of a certain latitude in folding, &c.

Claim.—Cutting envelope blanks in the manner and for the purposes substantially as set forth and described.

No. 47,509.—CHARLES H. BAGLEY, Waltham, Mass.—*Sick Chair.*—May 2, 1865.—This invention relates to a chair designed for bedrooms, and constructed and arranged in such a manner that all unpleasant odor or smell is effectually prevented from escaping therefrom, either while the device is in use or when closed, and the chamber also prevented from emitting any unpleasant odor while being removed from the chair.

Claim.—The sliding box B, provided with the lid H and hole G, in connection with the

vessel K, cover L, slide I′, and the bar J, provided with the slotted arm N, all arranged in connection with a case A, to operate in the manner substantially as and for the purpose set forth.

No. 47,510.—JULIUS BAUR, Brooklyn, N. Y.—*Manufacture of Steel.*—May 2, 1865.—This invention consists in the use of the following ingredients in the manufacture of steel, viz: iron, cryolite, oxide of iron, oxide of maganese, phosphate of lime, vegetable charcoal, and animal charcoal.

Claim.—The above described process, consisting of combining aluminum with iron in the manufacture of steel, substantially as set forth.

No. 47,511.—GEORGE BEZ, Mokena, Ill.—*Evaporating Pan.*—May 2, 1865.—This invention consists of a pan, under which is a boiler, which is supplied with water by means of a pipe. The steam from the boiler is carried through pans by means of pipes, and heats the sirup before it is let into the pan.

Claim.—The combination of fire and steam pans and pipes, as herein set forth and shown, for evaporating sirups.

No. 47,512.—ELIJAH BRADY, New York, N. Y.—*Sofa Bedstead.*—May 2, 1865.—This invention consists in so forming the sofa that the back can be let down and the surface of the back cushion brought in a line with the surface of the seat cushion, both forming one plain surface and forming the body of the bed, and by arranging the drawer under the seat of the sofa in such a manner that the front of the drawer, when pushed in, acts as a support to the back, holding it firmly. When the drawer is pulled out it forms a support under that part of the bed formed by the back of the sofa.

Claim.—The combination and arrangement of a sofa with the bed and drawer, substantially as described, for the purposes specified.

No. 47,513.—MELLEN BRAY, Boston, Mass.—*Shoe Lacing.*—May 2, 1865.—This invention consists in the use of staples arranged in opposite pairs, each pair overlapping or interlocking, in combination with a locking device.

Claim.—The employment of staples, arranged in opposite pairs, each pair overlapping or interlocking, in combination with a cord, string, or wire, or other such flexible or non-flexible locking device.

No. 47,514.—JOSEPH T. BRYAN, Lebanon, Ind.—*Corn Planter.*—May 2, 1865.—This invention consists in a combination of seed boxes, slides, cross-pieces, levers, tubes, shovels; also in a rod, connected at one end with the seed slide, and forming with the other end a valve at the bottom of the seed tube.

Claim.—First, the arrangement of the boxes H H with their slides I I and apertures *d d*, the cross-pieces *b b*, bar J, lever K, and tubes in front shovel posts P P, in combination with the ploughs Q Q Q Q P P and set piece F, for hilling.

Second, the attachment of the rods R R to the machine, for the purpose of ploughing and planting corn.

No. 47,515.—JAMES BUCKETT, Harlem, N. Y.—*Photographic Picture Holder.*—May 2, 1865.—A cylinder, divided into compartments to hold the picture, turns on a perpendicular shaft within an outer case, having apertures or regular intervals to show the pictures, and is governed by a worm screw and handle at one side, near the bottom.

Claim.—First, the movable cylinder or prism A, or its equivalent, containing a series of panels *b*, in combination with a movable or stationary case B, constructed and operating substantially as and for the purpose set forth.

Second, the bay windows applied to the case B, in the manner and for the purpose substantially as described.

No. 47,516.—THOMAS BYRNE and THOMAS HENRY, New York, N. Y.—*Machine for Printing Hats.*—May 2, 1865.—This invention consists in the employment of a conical printing roller, in combination with a suitable pattern roller, to which color is supplied by an endless apron, or other mechanism, in such a manner that hats and other articles, secured to the conical printing roller and revolved with it, are brought in contact with the pattern rollers, and continuous stripes, or other designs, can readily be produced on said hats or other material.

Claim.—The employment or use of the conical printing roller F, in combination with a suitable pattern roller B, of any desirable form or shape, and with a mechanism for supplying color, constructed and operating substantially as and for the purpose set forth.

No. 47,517.—JOHN CADY, Staffordsville, Conn.—*Picker Motion for Looms.*—May 2, 1865.—The object of this invention is mainly to secure a parallelism and steadiness in the vibrating of the picker staff, that it may deliver its blow squarely to the shuttle. Means for adjustment and compensation are also provided to effect the same end.

Claim.—First, the stop L, constructed and fastened to the bed H in the manner substantially as above shown.

Second, making the bed H of a concave form, by means of adjustable ends or inclined planes, substantially as described.

Third, the mode, substantially as above described, of attaching the picker staff and its strap to each other and to the shoe C.

Fourth, forming longitudinal grooves *o* inclining in the direction shown on the periphery of the part *q* of the box Q, for the purpose of lubricating its axis, substantially as shown.

Fifth, the notched flanch M′ of the part *q* of the box, in combination with the key *f*, substantially as above described.

Sixth, arranging the slot *g* in the bed H which receives the key *f*, so that the box and its axis can be lubricated from above the said bed, substantially as described.

No. 47,518.—CYRUS C. CARTER, Exeter, Ill.—*Seeding Machine.*—May 2, 1865.—In this invention adjustable tubes are fitted in the turning axle. By means of a jointed lever and rod extending up from the axle, the seed is shut off by the turning of the axle.

Claim.—First, the adjustable tubes C, fitted in the turning axle A, and provided with the funnel G, in combination with the seed-box E, provided with the reciprocating slide H, having the pendent plates *i* attached, and the perforated plates *g h*, all arranged to operate as set forth.

Second, the combination of the adjustable tubes C, turning axle A, seed-box E, provided with the slides *f g h*, the scattering board M, and the spring lever K, and notched bar L, all arranged substantially as set forth.

No. 47,519.—P. S. CARVER, Honeoye Falls, N. Y.—*Horse Rake.*—May 2, 1865.—This invention relates to devices by means of which the mechanism for locking and releasing the rakehead is enclosed, thereby preventing clogging, which will be readily understood from the claim and engraving.

Claim.—Enclosing the pawls H I in the groove *b* of the joint-rim D, by means of the strap G, in such a manner as to prevent obstruction, said strap also serving to form the joint and retain the parts together, and used in connection with a single handle E, the whole arranged, combined, and operating substantially as and for the purpose herein set forth.

No. 46,520.—E. D. CLAPP, Auburn, N. Y.—*Coupling for Thills.*—May 2, 1865.—This invention consists of a thill iron, constructed in two parts, and with conical perforated bearings, the said two parts being pivoted together, and made to overlap one another under the thill, in combination with the clip-iron.

Claim.—The thill iron, constructed in two parts, and with conical perforated bearings, the said two parts being pivoted together, and made to overlap one another under the thill, in combination with the clip-iron, constructed and arranged as described, all operating in the manner and for the purpose set forth.

No. 47,521.—GEORGE P. CLARK, Brooklyn, N. Y.—*Boot and Shoe.*—May 2, 1865.—This invention, relating to soles for boots and shoes, consists in inserting within or attaching to the same, a series of elastic studs, of any flexible and elastic material.

Claim.—Inserting within or attaching to the sole and heel of a boot or shoe, or in and to any desired portion of the same, a series of elastic studs or projections, made of any suitable flexible and elastic material, and of any desired number, size, and shape, substantially as described, and for the purposes specified.

No. 47,522.—JAMES CLAYTON, Brooklyn, N. Y.—*Crank-wrist Connections.*—May 2, 1865.—This invention relates to making the connection of a crank or other wrist with a piston-rod, or other reciprocating piece, from which it receives or to which it transmits rotary motion, by means of a slotted cross-head without a pitman. It consists in a construction of the box which receives the crank-wrist, whereby facility is afforded by tightening it upon the crank-pin, and within the slot of the cross-head, when it has become loose by wear, and in so providing or applying a guide for the cross-head as to dispense with flanges in the aforesaid box.

Claim.—First, the combination of the lining pieces *e e*, having their exterior sides of sloping form, the independent wedge-shaped side pieces *b b*, the screws *d d*, and the nuts *e e*, substantially as and for the purpose herein set forth.

Second, in combination with the said lining pieces, side pieces, screws, and nuts, applied within a cross-head, the guides *a a* provided for the cross-head, substantially as and for the purpose herein described.

No. 47,523.—W. R. CLOSE, Bangor, Me.—*Ox Yoke.*—May 2, 1865.—This invention consists in the adjustment of the draught in order to cause the leverage on the carriage pole, when connected with the yoke, to be duly proportioned to the power of the oxen, when the yoke may be in use.

Claim.—Improved yoke-ring adjusting mechanism, as constructed, of the supporting saddle F, the vibrating hanger C, its catch block *b*, its confining screw and nut or nuts, and the

curved rack D, arranged together and applied to the yoke, in manner and so as to operate therewith substantially as and for the purpose specified.

No. 47,524.—JOSEPH CORDNAN, Brooklyn, N. Y.—*Awning and Reflector.*—May 2, 1865.—This invention consists in a series of slats mounted on axles, and provided with crank arms connected by a bar that is operated by cords or similar device, so that the slats may be turned sufficiently to exclude the direct rays of the sun, and at the same time become reflectors to illuminate the store. This awning is easily managed, and equalizes the light both beneath itself and in the store in front of which it is located.

Claim.—The combined awning and reflector, constructed and applied substantially as specified.

No. 47,525.—G. W. DEMOND, Boston, Mass.—*Chimney Cap.*—May 2, 1865.—A revolving chimney cap with broad blades somewhat spiral in shape, and answering with narrow wind vanes of quite similar shape, to form buckets, one part or edge of each of the blades being inclined down into the cylinder of the device.

Claim.—Combining with the vanes *e* the blades *f*, extending down into the cylinder, and having open spaces between their inner wedges, substantially as herein set forth.

No. 47,526.—Z. W. DENHAM, Washington, D. C.—*Paper Fastener.*—May 2, 1865.—This invention consists of a curved piece of sheet metal, having one or two holes punched through in such position that when the wedge is passed through holes cut in the paper, it may double on itself and be secured by lapping through the holes.

Claim.—The fastener A B C, substantially in the manner and for the purposes described.

No. 47,527.—JAMES DODGE, Waterford, N. Y.—*Grinding and Polishing Metals.*—May 2, 1865.—This invention consists of two grinding cylinders or wheels, mounted on a suitable frame, adjustable to or from each other, and having during their revolution a longitudinal movement. On a vertical plane between them, in suitable guides, is the gate or frame containing a series of sockets for the reception of the articles to be ground, each socket being geared to the other by small pinions, by which they can be rotated together by the operation; the frame or gate is raised or lowered by a screw. Two vertical gauge bars attached to the ends of the upper cross-head of the gate, and moving with it, play between the adjusting slides upon which the wheels are mounted, and cause them to move to or from each other, to suit the shape of the article to be ground.

Claim.—First, the method of and machinery apparatus for grinding and polishing spindles, tools, file blanks, and other regular or irregular-shaped articles, substantially as herein described; that is to say, by the employment of two revolving grindstones or polishing wheels, in combination with a mechanism for moving, in accordance with a pattern, the said stones or wheels, or either of them, while revolving to and from each other, substantially as herein set forth.

Second, for grinding and polishing round articles, in combination with the above, causing the said articles to revolve in contact with the guide stone or polishing wheels, substantially as set forth.

No. 47,528.—AARON DOUGLASS, Paterson, N. J.—*Lock Joint for Railroads.*—May 2, 1865.—The object of this invention is to obtain a lock joint for railroad rails which, presenting little difficulty of construction, will meet all the required conditions in its operation, and the invention consists in a novel formation of the ends of the rails, or bars, whereby the desired result is obtained without cutting away any portion of the necks of the rails.

Claim.—The combination of the three laps A B C, two formed of portions of the base and head of the rail, and one of a portion of the neck thereof, by dividing the rail in vertical and horizontal planes, and offsetting the neck in a lateral direction between the said horizontal planes, substantially in the form and manner herein specified.

No. 47,529.—WM. H. ELLIOT, Plattsburgh, N. Y.—*Kerosene Stove.*—May 2, 1865.—Around the burner is an annular piece of metal, so fitted as to allow the lamp to be readily pushed under the stove and form a good connection with the flue holes in the bottom of the stove and become thus a part of the flue holes. Suitable cleats and stops are under the side of the bottom plate to guide the lamp, when being pushed into its place.

Claim.—First, so constructing a lamp with its connecting piece *g*, and the lower plate of the stove, that the connection between the lamp and stove may be made by sliding the lamp under the stove, substantially as described.

Second, jointing the several rings of said connecting piece together, substantially as represented at *g*, for the purpose set forth.

No. 47,530.—WM. H. ELLIOT, Plattsburgh, N. Y.—*Oil Pump.*—May 2, 1865.—The piston of the pump descends to the receptacle of oil, at the bottom of the well. The auxiliary gas-pump is above ground, and its pipe descends into the well only far enough to receive the gas above the liquids. The auxiliary force-pump for forcing water into the well is in like manner above ground. The auxiliary gas-pump is convertible into a force-pump by the application of a three-way cock.

Claim.—First, the main pump B, applied to the elevation of oil from the well, and the auxiliary pumps *g*, applied to the exhaustion of gas or air from a higher position in said well, co-operating substantially as described.

Second, the auxiliary pumps *p*, arranged in relation to the foregoing, substantially as shown and described.

Third, a suction or gas-pump *g*, and gas-separator *f*, the one arranged above the surface of the earth, and the other below the seed-bag, or packing, substantially as described.

Fourth, a reversible suction and force gas-pump *g*, and lifting pump *b*, so arranged in relation to the seed-bag, or packing, and to the surface of the earth, substantially as set forth.

No. 47,531.—CHARLES EVANS and W. C. BARTLETT, Morton, Ill.—*Grading Scrapers.*—May 2, 1865.—This invention consists in the employment of a revolving scraper in a stationary frame, mounted on wheels and arranged with a lever, so that the said scraper is allowed to rotate without raising the main frame of the machine, and its wheels and the machine rendered capable of being arranged with the greatest facility.

Claim.—The revolving scraper G, in combination with the stationary mounted frame A, and lever E, all arranged substantially as and for the purpose set forth.

Also, the lever J, in connection with the wheel H. or their equivalents, for the purpose specified.

No. 47,532.—H. EVERETT, Philadelphia, Penn.—*Manufactnre of Boxes.*—May 2, 1865.—This invention consists in forming a joint by means of a narrow strip, the two edges of which are folded over, so that an end view would somewhat resemble the letter S, into the left bend of which the lower end of the side of the box is inserted vertically, and into the other bend, the edge of the bottom, bent up at a right angle. The whole joint is then clamped and soldered.

Claim.—The bent strip D, applied to the formation of the joints of boxes, packages, or other vessels, in the manner described, for the purpose specified.

No. 47,533.—ABRAM FANCKBONER, Schoolcraft, Mich.—*Fanning Mill.*—May 2, 1865.—In this invention there is a peculiar arrangement of the upper screens and receptacles for the grass-seed, cockle, &c., so that they are separated at first from the heavier and perfect grain, and thus saved from being blown away by the fan-blast.

Claim.—First, the arrangement in relation to each other, above described, of the double screen B, the inclined board P, and the divisions F and G of the receiving box E, when the parts are so constructed as to operate in conjunction with each other, as herein set forth.

Second, the construction and arrangement of the receiving box E, substantially as and for the purpose set forth.

No. 47,534.—JAMES R. FINLEY, Delphi, Ind.—*Cultivator Plough.*—May 2, 1865.—In this invention the ploughs are double, and the shares and mouldboards are made of one piece of steel plate. The mouldboards are symmetrical in form, oblate, and curvilinear.

Claim.—The equal or symmetrical mouldboard when said parts form a continuation of the share, and have the peculiar form and configuration, as set forth and described.

No. 47,535.—DARIUS G. FLETCHER, Racine, Wis.—*Heat Radiator.*—May 2, 1865.—This invention is designed as an improvement on a patent granted to the same inventor April 17, 1860, and consists of a cast-iron ring at the base of the conical part of the inner cylinder, supported by arms resting on the lower part of the outer cylinder. The perforations in the upper part of the inner cylinder are rectangular, the space between the two cylinders being covered by an iron ring.

Claim.—First, the cast-iron ring *c* and arms *d* for supporting the chamber B within the case A, substantially as and for the purpose specified.

Second, the rectangular openings *e f* of the upper register of the chamber B for the purpose of facilitating the construction of the device.

Third, the cast-iron ring or cover E for the space between the chamber B and cylinder, as set forth.

No. 47,536.—C. FORD, Forest City, Ill.—*Shovel Plough.*—May 2, 1865.—This invention consists in connecting to the frame of the ploughs by means of hinges, shafts, to which is connected at one end an adjustable bar provided with holes and made adjustable by bolts fastened rigidly to the handles of the shafts, having on their ends nuts for the purpose of adjustment.

Claim.—First, the mode of making an even-draught two-horse shovel plough as herein described, with the shafts F attached to the frame by the hinges *m* and *n*, and connected by the coupling bar H, which arrangement, while it holds the shovels evenly, enables the operator to change the face of the shovels at will, and thereby guide the plough.

Second, the false cutters K, in connection with the braces I, made to slide in the groove in the head piece D, and secured by the clamps J, as herein set forth, in such manner that the operator, by loosing the clamps J, may change the width between the shovels by sliding the tops of the braces in the groove.

Third, the ring-headed bolt O for holding the double trees on the plough, substantially as herein set forth, in such manner that when the plough is thrown on its slide they will balance, remaining parallel to the neck yoke.

No. 47,537.—F. G. FORD, Washington, D. C.—*Window Lock.*—May 2, 1865.—In this device a round bolt, surrounded by a spiral spring inserted in the top rail of the lower sash, and having on its inner end a bottom formed by a transverse pin passing through it, plays through a face plate having an inner cylindrical flange surrounding a portion of the bolt. In this cylinder a rectangular slot is cut to guide a pin in the bolt, by which the first motion allowed thereto is forward sufficiently far to allow the transverse pin to pass through a slot in the plate on the opposite lower rail of the top sash, when the other portion of the said rectangular slot allows the guide pin to move therein and the bolt to be turned one-fourth of a revolution, which causes the transverse pin to slide upon the inclined jaws of the slot in the catch plate and draws and holds the two sash rails together.

Claim.—The face plate, to which is attached the double right angle slotted tube, the semi-rotating sliding spring bolt, the recessed guiding plate, and the double inclined recessed plate catch, the same being applied and operating in the manner and for the purposes herein specified.

No. 47,538.—JIM B. FULLER and J. P. UPHAM, Claremont, N. H.—*Preparing Hemp, Flax, &c., for Spinning.*—May 2, 1865.—This invention consists in subjecting the fibres, while moist, to the action of drawing rollers previous to carding, so as to separate the masses of fibres into suitable short fibres. The distance between the sets of drawing rollers is regulated to suit the kind of fibres treated. It is best to card the fibres while still moist, but this is not necessary.

Claim.—Drawing or separating the vegetable fibre in the manner specified previous to a carding, picking, or beating operation, for the purposes and as set forth.

Also, carding the fibres of flax, hemp, &c., in a moist condition, for the purposes specified

No. 47,539.—JIM B. FULLER and JAMES P. UPHAM., Claremont, N. H.—*Process for Separating the Fibres of Hemp, Flax, &c.*—May 2, 1865; ante-dated April 18, 1865.—This invention consists in subjecting the fibres to the action of steam in a close vessel and then suddenly withdrawing the steam by opening a valve, the fibres being retained in the vessel. The operation is repeated until the fibres are sufficiently separated.

Claim.—The mode herein specified, of separating vegetable fibres while retained in a suitable vessel, by subjecting such vegetable fibre to the action of steam under pressure, and then to a series of expansions derived from the sudden discharge of steam (but not fibre) from such vessel, as and for the purpose specified.

No. 47,540.—J. P. GILBERT, M. D., Long Island city, N. Y.—*Instrument for Curing Piles.*—May 2, 1865.—This invention consists in the employment of any cold body provided with a nipple to enter the rectum in such a manner that by said cold body the blood in the tumor is deprived of its superfluous heat and returned to its regular channels. The nipple serves to keep the cold body in its place; and, in order to allow the blood to circulate from the tumor, the said nipple is provided with grooves near its base. By applying suitable ointment to the nipple the effect of this instrument can be improved, and the instrument is kept in a box placed in the cold body, which is made hollow for the purpose, and provided with a cover that can be readily removed and replaced.

Claim.—First, the cold body A provided with a nipple B, constructed and operating substantially as and for the purpose specified.

Second, the grooves A in the nipple B, applied and operating substantially as and for the purpose set forth.

No. 47,541.—HERMAN HAUPT, Cambridge, Mass.—*Mode of Mounting Drills.*—May 2, 1865.—In an application for patent of even date herewith, there is described a drill operated by steam or other elastic fluid, consisting of a cylinder, through the hollow piston of which a drill bar is inserted. In lieu of a hollow piston rod a solid one may be used in connection with outside gripper boxes. The object of this invention is to mount such drills so as to economize space and allow of easy and speedy adjustment.

Claim.—First, mounting drilling, boring, or other like machinery, when arranged for operation by steam, compressed air, or other fluid, upon a columnar frame, whether solid or tubular, and whether steam or other fluid is conveyed to said machinery by independent pipes or through the columns, substantially as set forth.

Second, in combination with the columnar frame for the support of machinery for drilling or boring rocks or other subterranean operations, the pointed set screws, or the equivalent thereof, to brace and steady the said frame, in the manner substantially as set forth.

Third, in combination with the columnar frame, which, for the purpose of conveying steam or other fluid, is hollow, the thimbles incasing the set screws to protect the same and prevent leakage, substantially as set forth.

Fourth, the combination of the columnar frame with adjustable supports for the bearings

of the trunnions of drills or other like machinery, so as to admit of adjustment of said drills at any height and at any angle in the plane perpendicular to the axis of the trunnions.

Fifth, making the supports of a segmental form, and forming the bearing therein adjustable, so as to admit of universal motion of the drills, substantially as set forth.

No. 47,542.—GEORGE W. HAWK, Chicago, Ill.—*Chair and Cradle.*—May 2, 1865.—This invention consists in so constructing the parts composing a cradle that, by an easy re-arrangement, the cradle is converted into a chair for a child.

Claim.—First, the combination and arrangement of the two sections A A, the ends C C, and the rockers B B, operating substantially as and for the purposes herein shown and described.

Second, constructing the bottom of the cradle of five parts, D E F G H, when arranged and operating as and for the purposes specified and shown.

No. 47,543.—BENJAMIN S. HILL, New York, N. Y.—*Die for Cutting Screw Threads.*—May 2, 1865.—This invention consists in cutting the clearing openings through the die in a diagonal line so as to have the cutting points of the threads act spirally to the axial line of the bolt.

Claim.—The arrangement of the chasing or cutting points of a die or chaser for cutting male screw threads in a line or lines diagonally across the cutting faces or edges, or spiral to the axis, substantially as and for the purposes herein set forth.

No. 47,544.—B. B. HOTCHKISS, New York, N. Y.—*Explosive Shell.*—May 2, 1865.—This shell has longitudinal ribs or webs extending from its inner surface towards the axis; these ribs are radially arranged. It has also transverse ribs running round the interior of the shell. The object of these ribs is to strengthen the shell, and also to prevent such concussion of the charge of the shell against its inner surface as shall result in premature explosion.

Claim.—The employment of the webs B and C, or either of them, arranged to extend from the inner surface of a shell nearly to the centre or axis, substantially in the manner and so as to serve the double purpose herein set forth.

No. 47,545.—JAMES H. W. HUCKINS, Boston, Mass.—*Tomato Soup.*—May 2, 1865.—This invention consists of a composition made by cooking together one and a half pound of onions, one and a half pound of turnips, one and three-quarter pound of carrots, one pound of beets, three and a half pounds of butter, three and a quarter pounds of flour. The mixture is allowed to cool, and one ounce of black pepper, half pound of salt, and three-quarters of a pound of brown sugar are added. Tomatoes which have been cooked and strained, and a liquor made by boiling beef in water are then added. The liquid is then separated from the solid portion and put up in cans for use.

Claim.—The composition made in manner and of materials substantially as herein before specified.

No. 47,546.—DANIEL HURD, Chicago, Ill.—*Rotating Stop Cock.*—May 2, 1865.—The object of this invention is to draw fluids from several sources by one cock. The cock is formed with several lateral openings, to be brought at will into coincidence with the pipes for which they are severally designed, and a dial upon the end of the plug serves to indicate the relative positions of these parts.

Claim.—First, the combination and arrangement of the jacket E, and the barrel F, provided with the three series of holes a' a'' and g, operating as and for the purposes specified and shown.

Second, in combination with the above, the employment of the dial and pointer, arranged as and for the purposes described.

No. 47,547.—JOHN GOULDING, Worcester, Mass.—*Jacks and Mules for Spinning Yarn.*—May 2, 1865.—The object of these improvements is to economize space on the floor of the factory; to avoid the liability of the yarns to break from sagging, as when spun in a horizontal position; to facilitate the attendance upon the machines, and to secure greater evenness and uniformity in the thread produced. The spindles are supported in a prostrate position, in fixed rails near the floor; the carriage supports the roller jaws which deliver and hold the rovings during spinning, and also the spools of rovings. Two sets of prostrate spindles are used and operated from the same drum, the carriages of the first and second set being connected with the same counter-shaft. Two other sets may also be arranged in the other side of the frame of the driving mechanism, and operated by the same mechanism. An upright mule for extending rovings by drawing rollers previous to stretching and twisting, the inventor proposes to construct in accordance with his invention, by mounting the successive pairs of drawing rollers, together with the gearing for imparting to them the required speed, upon the rising and falling carriages, in which case the last pair of drawing rollers may act as the jaws which deliver the roving to the spindles.

Claim.—First, the combination of a series of prostrate spindles, roller jaws, a movable carriage, and upright guides for the carriage, substantially as set forth.

Second, the combination of a series of prostrate spindles, roller jaws, turning spool support, movable carriage, and upright guides for the carriage, substantially as set forth.

Third, the combination of the rising and descending carriage, and roller jaws, with upright guides for the carriage, and a rack, substantially as set forth.

Fourth, the combination of the rising and descending carriage, roller jaws and turning spool support, with upright guides for the carriage, and a rack, substantially as set forth.

Fifth, the combination of the rising and descending carriage, the roller jaws and their gearing, with instrumentalities for stopping the revolution of said jaws, when the length of rovings required for one spinning operation has been delivered, substantially as set forth.

Sixth, the combination of the rising and descending carriage, the roller jaws, turning spool support, and the gearing for transmitting motion to roller jaws and turning spool support, with instrumentalities for stopping the revolution of said jaws and spool support when the length of rovings required for one spinning operation has been unwound and delivered, substantially as set forth.

Seventh, the combination of a series of prostrate spindles, with two trains of driving mechanism, and with shifting mechanism to put the spindles in connection with one or other train of driving mechanism, and disconnect them therefrom, substantially as set forth.

Eighth, the combination of a series of prostrate spindles with a train of mechanism for turning them backwards, and with shifting mechanism to connect and disconnect the spindles therefrom, substantially as set forth.

Ninth, the combination of a series of prostrate spindles, and the train of backing-off mechanism, with mechanism for varying the extent of the backing-off movement, substantially as set forth.

Tenth, the combination in a jack of the backing-off mechanism, the faller mechanism, and the devices for varying the extent of movement of these two mechanisms, substantially as set forth.

Eleventh, the combination of a series of prostrate spindles, and the train of driving mechanism for impelling them with varying speed during winding, with mechanism for changing the varying speed, substantially as set forth.

Twelfth, the combination of two series of prostrate spindles and their appurtenances, arranged back to back with one set of driving mechanism, substantially as set forth.

No. 47,548.—H. A. HARVEY, New York, N. Y.—*Machinery for Making Screws.*—May 2, 1865.—This invention is fully set forth in the claim.

Claim.—First, the combination, substantially as described herein, of hoppers or receptacles, forwarding ways, delivering apparatus, and two sets of conveyers or elevators, with shaving, nicking and threading machines, whereby headed blocks may be thrown into a hopper and converted into screws without manual labor, as described; the blanks being transferred from one machine to the hopper or receptacle of another by elevators or conveyers, operating in the combination substantially as specified.

Second, the combination of a shaving machine and a nicking machine, with an elevator and a hopper and its accessories, substantially as described, whereby headed blanks may be converted into nicked blanks, substantially as specified.

Third, the combination of a nicking machine and a threading machine, with an elevator and a hopper, and its accessories, substantially as described, whereby shaved blanks may be converted into screws, substantially as set forth.

Fourth, a pyramidal hopper or receptacle, provided with an oscillating agitator, constructed and operating substantially as specified.

No. 47,549.—H. A. HARVEY, New York, N. Y.—*Machinery for Making Screws.*—May 2, 1865.—This invention will also be understood by the claim.

Claim.—First, the combination, substantially as described herein, of hoppers or receptacles, forwarding ways, delivering apparatus, and shaving, nicking and threading machines, whereby headed blanks may be thrown into a hopper and converted into screws without manual labor; the machine operating on the blanks being arranged on different levels, as described, and the blanks descending from one machine to another, substantially as set forth.

Second, the combination of a nicking and shaving machine, on different levels, and in working connection with each other by means of apparatus substantially such as described, the whole arranged and operating substantially as set forth.

Third, the combination of a nicking machine with a threading machine, on different levels, and in working connection with each other by means of apparatus substantially such as described, the whole arranged and operating substantially as specified.

Also, arranging shaving and nicking, also nicking and threading, and also shaving, nicking and threading machines, on different levels, in such manner substantially as described, that blanks may be transferred from one machine to another without handling, substantially as set forth.

No. 47,550.—DANIEL HURD, assignor to himself, E. K. HURD and A. E. SWIFT, jr., Chicago, Ill.—*Apparatus for Carburetting Air.*—May 2, 1865.—This invention consists of a vessel divided into several compartments by horizontal partitions. In each compartment

there is a series of vertical partitions. The ends of all the partitions in the lower compartment extend to the sides of the case, and the ends of the partitions in the upper compartment are drawn in toward a pipe. A partition crosses the ends of all the partitions A, at a short distance from the walls of the case, the said partition being about one-third the height of the partitions A, and between the partitions C and the wall are openings communicating with the compartment below A. At the opposite end of this compartment is a partition similarly arranged. The air enters the pipe D, and passes up through the passages out of the pipe C. The naphtha is supplied through the openings B.

Claim.—The peculiar combination and arrangement of the cylindrical vessel A, the floors *g h i*, the peculiar curved vertical partitions *a*, and the barriers *c d e f*, constructed and operating as and for the purposes specified and shown.

No. 47,551.—JOHN H. IRWIN, Chicago, Ill.—*Lantern.*—May 2, 1865.—This improvement consists in dividing the lantern guard horizontally into two or more parts, connected by a hinge and spring.

Claim.—First, dividing the guard of a lantern in two or more parts by a horizontal section, substantially as and for the purposes herein specified and shown.

Second, connecting the parts of the guard by a hinge upon one side, and the catch F, or it equivalent, upon the other, substantially as shown and described.

Third, providing the parts of said guards with the curved projections *a*, substantially as and for the purposes specified and shown.

Fourth, the combination and arrangement of the guards *a* and *b*, &c., the rings *c d*, substantially as shown and set forth.

No. 47, 552.—H. C. KETCHUM, Bloomfield, N. J.—*Toy.*—May 2, 1865.—A puzzle is made by boring a circuitous hole in each of two pieces of wood, so that when the two are united and a cord passed through the holes, the cord may apparently be cut by a knife and not be divided.

Claim.—The apparatus called the mystic cord, constructed and operating as above described, as an improved article of manufacture.

No. 47,553.—GEORGE W. KING, Greenville, N. Y.—*Horse Hay Rake.*—May 2, 1865.—This invention relates to certain devices for holding the rake in working position and raising and turning the same. A detailed description is unnecessary, as the invention will be readily understood from the claim in connection with the engraving.

Claim.—First the lever N, in combination with plate *h* and arm Y, provided with wheel C; the whole arranged and operated in the manner substantially as and for the purpose set forth.

Second, the lever D, in combination with lever E, arranged and operating as and for the purpose herein specified.

No. 47,554.—ROBERT H. LECKY, Allegheny City, Penn.—*Coupling Shafts of Boring Tools.*—May 2, 1865.—In this coupling or joint the tenon upon the one rod which screws into the enlarged end of the other is enlarged, and of a cone shape at its base, terminating in an annular groove which receives the edge of the socket on the other rod and prevents the same from spreading outwards.

Claim.—The use of the coniformed base E and angular groove R, either separate or combined, when used in connection with the screw A, or male part of the socket joints, for oil, tools, &c., the nut B, or female part of the joint, being fitted and adapted to the male part; the whole being constructed, arranged, and operating substantially in the manner herein described and for the purpose set forth.

No. 47,555.—ROBERT H. LECKY, Allegheny City, Penn.—*Coupling Shafts for Boring Tools.*—May 2, 1865.—This invention relates to the screw threads which unite and hold the two rods together, and consists in cutting that surface or side of the thread upon which the percussive force is suspended, as the drill descends in a plane perpendicularly to the axis of the rod, instead of cutting the thread with both faces inclined, or of V-shape, as commonly practiced.

Claim.—Constructing the screw threads of socket joints for oil, tools, &c., in the manner substantially as herein described and for the purpose set forth.

No. 47,556.—F. and CHARLES LEMME, San Francisco, Cal.—*Belt Buckle.*—May 2, 1865.—This invention consists in hinging the buckle in the middle, so that when flattened out binding processes on each flap will hold the belt firmly in place.

Claim.—The arrangement of the cross-bar and flange D and E, with the tongue F, in combination with the main plate or shield A B C, when the parts are connected and filled to produce the result substantially as described.

No. 47,557.—WILLIAM H. LONG, Mountain City, Colorado Ter.—*Gold Separator.*—May 2, 1865.—This invention consists of a tube A, in the centre of which is a revolving shaft. Another tube is attached to said shaft, and from the bottom of said tube extend the tubes D

D to the bottom of the tube A, when they are bent at right angles to the shaft and extend to the sides of vessel. The tubes C C extend from a distance above the tube E down through the bottom of said tube into the vessel A, where they are bent in the same manner as the tubes D D. In the side of the vessel A is a slot, through which the dirt escapes and falls into the the vessel L, and any amalgam that may escape will be returned to the vessel A. The bent pipes D D and C C are provided with sheaves, which extend from said pipes downwards nearly to the bottom of the vessel A.

Claim.—First, conveying the product of the battery through the mercury and discharging it beneath the same, by creating a vacuum at the end of the conveying tubes D′ D′, substantially as and for the purposes herein specified and shown.

Second, the employment of one or more tubes D′ D′, arranged and operating substantially as and for the purposes set forth and described.

Third, the combination of one or more air tubes C C′ with the tubes D D′, arranged and operating as and for the purposes shown and set forth.

Fourth, the combination and arrangement of the aprons S with the tubes C′ D′, as and for the purposes described.

Fifth, the combination of the shaft F, the funnel E, tubes C C′ D D′, and aprons S, arranged and operating as and for the purposes described.

No. 47,558.—Peter Luck, Williamsburg, N. Y.—*Pulley Block.*—May 2, 1865.—This invention consists in the application to a pulley block of one or more movable side wings, in combination with a locking pin, and hung upon the axle of the sheave or sheaves in the pulley block in such a manner that by withdrawing the locking pin said movable side wing or wings are liberated and free to turn down, and thereby free access is given to the sheave or sheaves in the block. By this arrangement much time is saved in hitching the rope.

Claim.—The movable side wing or wings, applied in combination with the locking pin and with the axle of the sheave or sheaves of a pulley block, substantially as and for the purpose set forth.

No. 47,559.—John F. Morgan, Boston, Mass.—*Lunch Box.*—May 2, 1865.—This invention consists in so attaching the sides of the box to the cover and bottom portions or plates thereof that when the box is empty the said side plates can be all folded and laid down upon the bottom and held together by closing the cover. There is an additional receptacle at the bottom for holding a flask.

Claim.—A folding box, made substantially as herein shown and described, either with or without a bottom receptacle.

No. 47,560.—N. Niederpruen, Buffalo, N. Y.—*Adjusting Sewing Machine.*—May 2, 1865.—The wheel has its bearings in a frame, capable of being raised or lowered by a thumb-screw, which is located above the table.

Claim.—The arrangement of the sliding frame F, thumb-screw E, and journal boxes *e e*, in combination with the table top of a sewing machine, substantially as and for the purpose herein set forth

No. 47,561.—L. H. Olmsted, Newark, N. J.—*Lubricator.*—May 2, 1865.—This invention consists in using a hollow shaft, with an orifice running from the interior to the exterior, at the place where the pulley revolves on the shaft. This orifice is closed with leather or any other sufficiently porous substance to allow the oil within the hollow shaft to permeate to the rubbing surface.

Claim.—A hollow shaft with an aperture or apertures open from the interior to the exterior, said apertures being closed with leather or any other substance that will produce the intended effect, for the purpose set forth.

No. 47,562.—H. S. Osborn, Belvidere, N. J.—*Preparation of Nitrate of Potassa.*—May 2, 1865.—This invention consists in lixivating wood ashes with pure water at a temperature below 60° Fahrenheit. The solution thus obtained is evaporated to a density of 24° Baumé, and allowed to flow while hot into vats lined with lead. It is allowed to remain in these vats until cold, when the chloride of sodium will be decomposed and chloride of lead will be precipitated. The liquid is then decanted and treated with a mixture of nitric acid and water of density of 19° Baumé. The solution is then evaporated and crystalized.

Claim.—The manufacture of nitrate of potassa from the lixivum of wood ashes, in the manner substantially as described.

No. 47,563.—George M. Pagett, Adams Township, Ind.—*Animal Trap.*—May 2, 1865.—This trap is provided with a poised platform placed in such position in regard to the bait that to reach the latter the animal must step upon the former. Before reaching the bait the animal encounters a treadle, which it is obliged to step upon in order to get at the bait. No sooner, however, has the animal stepped upon the treadle than, by depressing its front end and raising its rear end, a wire hinged to its rear end is made to throw off the catch which retains the poised platform, whereupon the animal is precipitated into a box beneath, and the platform returns to its original position.

Claim.—The combination of the catch and head board, thereby holding a poised platform stationary until the treadle is depressed.

Also, the stationary bait pans, in combination with the self-adjusting lever treadle, so arranged that the rat must come in contact with the treadle before it is in reach of the bait; consequently the platform falls leaving the bait untouched.

No. 47,564.—NATHANIEL F. POTTER, Providence, R. I.—*Apparatus for Preparing Peat for Fuel.*—May 2, 1865.—This invention consists of a tube mounted upon wheels and provided with a central shaft, the said shaft being rotated by means of gear wheels, &c. The shaft is provided with arms and a screw propeller blade near the bottom to force out the peat. The peat after leaving the tube passes to an endless apron, and is cut into cakes of proper size by a cylinder, after which it is dried.

Claim.—First, the combination of a mill for tempering peat, as described, with a movable carriage, for the purposes specified.

Second, the combination of the clutch H with the pinions F F′ and the toothed gears G G′, for the purpose of imparting motion to the shaft B, in either direction as desirable for the purposes specified.

Third, the combination of the endless apron L with a cylinder where surface is provided with cells, or its equivalents, substantially as described, for the purposes specified.

No. 47,565.—JAMES POWELL, Cincinnati, Ohio.—*Globe Cock.*—May 2, 1865.—In this cock the valve stem screw works on the removable cap, and when the cap is lifted the valve is guided by lateral wings upon the stem within the smooth cylinder, upon which the screw cap fits, and also by isolated projections from the valve which passes down through the valve seats.

Claim.—The combined valve and valve stem, constructed and guided substantially as herein set forth.

No. 47,566.—J. L. QUINBY, Pleasant Grove, Penn.—*Stone Gatherer.*—May 2, 1865; antedated April 26, 1865.—This invention consists in the employment of a revolving toothed cylinder and an endless apron, connected with a stone-receiving box suspended from a mounted frame and provided with a hinged tail-board and hinged bottom, with fastening operated from the driver's seat.

Claim.—First, the endless apron K, in connection with the rotating toothed cylinder N and the scoop L, arranged with the bars I I and arms M M applied to the mounted frame A, substantially as and for the purpose herein set forth.

Second, the shaft H, the bars I I, arms M M, and cords *q*, in combination with the lever *d*, bearing *a*, shaft E, and lever G, all arranged substantially as shown.

No. 47,567.—LEWIS RATHBONE and WILLIAM HAILES, Albany, N. Y.—*Cooking Stove.*—May 2, 1865.—This invention consists in forming the fire-pot of stove in such a manner that air is admitted at the back sides and front by a peculiar arrangement of air chambers, &c., beneath and behind the fire-pot.

Claim.—First, grating the back plate of a stove so that the draught flue will cause air to circulate through the bed of partially ignited coals from a point near the base to the top thereof, from a chamber in rear of said back plate, in such manner that the refractory particles of coal are caused to burn, substantially as described.

Second, the combination of a front passage *i*, a grated back D, and a cross passage *f*, substantially as described.

Third, the combination of the front passage *i*, and passages F F, cross passage *f*, grated back D, and draught flue *b*, substantially as described.

No. 47,568.—WILLIAM RHODES and M. PORTER, Lovington, Ill.—*Cultivator.*—May 2, 1865.—This invention consists in an ordinary wheel cultivator, with the front cross-bar forming the arc of a circle. Upon the tongue is a roller, which bears against the cross-bar. The rear end of the tongue is pivoted, thus enabling the driver to change the line of draught of the machine.

Claim.—First, the roller F mounted upon the tongue E and adapted to move simultaneously therewith, so as to change the line of draught, in the manner and for the purpose herein set forth.

Second, the slot *e*, whereby the draught may be shifted at will from the tongue E to the roller F, in the manner and for the purpose described.

No. 47,569.—HAMILTON RICHARDSON, Janesville, Wis.—*Apparatus for Heating Buildings.*—May 2, 1865.—In a chamber in the chimney above the fire-place are two series of sheet metal pipes connected at the top and bottom by a metallic diaphragm, and open at both ends. These openings are so governed by valves and connecting passages that the products of combustion can be directed through them simultaneously by opening said valves, or by closing them can be sent in a circuitous route, entering the pipes at the sides and passin out of the same in the centre. In this chamber convenient pipes convey heat as

desired. Near the floor are apertures for admission of air to this chamber, and likewise in the back of chimney are apertures to admit external air.

Claim.—First, the series of radiating pipes 1, 2, 3, &c., arranged in a hot air chamber within the chimney, and so provided with cross or connecting pipes and valves that the draught may be varied at pleasure from a direct to an up and down draught, substantially as and for the purposes herein set forth.

Second, in combination with the hot air chamber above described, the flues or passages *d* and *e*, constructed and arranged to operate substantially as and for the purpose set forth.

Third, in combination with the hot air chamber above described, the flues or passages *g* and *h*, for the purpose of admitting cold or fresh air from the room or from outside of the building, as herein set forth.

No. 47,570.—C. D. W. RIES, Edwards, N. Y.—*Tug Buckle.*—May 2, 1865.—This invention consists in the combination of a hinged bar fixed across the box, and held, when shut by a spring, with a tongue projecting from the inner bar of the buckle.

Claim.—The combination of the hinged bar I with the tongue K, projecting from the inner bar of the buckle, substantially as described and for the purpose set forth.

No. 47,571.—CALVIN B. ROGERS, Deep River, Conn.—*Tool for Making Dice, &c.*—May 2, 1865.—A tube having a reservoir at one end and a screw point at the other, for the delivery of the paint, acts like a fountain.

Claim.—The implement A, constructed and operated substantially as above described, for the purpose of blacking dice tablets and other articles.

No. 47,572.—CALVIN B. ROGERS, Deep River, Conn.—*Machine for Cutting Ivory.*—May 2, 1865.—The object of this invention is to cut ivory and similar substances by machinery, and it consists of a circular cutter revolving by means of a hollow shaft around a holding rod, which is forced down upon the block of ivory to be cut, holding it firmly in place while the circular revolving cutter is then brought in contact with the block, cutting it into circular pieces, while a centring or marking cutter comes up through the table from below and centres or makes other marks on the under side of the ivory block.

Claim.—First, the cutter H, operated from below the bed upon the under side of the work while it is held upon the bed, substantially as above described.

Second, the combination in machines for cutting ivory and other substances of a holding rod applied within the kerf of a cutter with a cutter which divides the work from the stuff, and with a drill or centring or marking cutter operated from below the work, substantially as described.

No. 47,573.—LYNFORD ROWLAND, Philadelphia, Penn.—*Bucket Ear.*—May 2, 1865.—This invention consists in swaging the ear outwardly, so as to form a socket from the centre to the top of the same of a proper size to admit of inserting the piece of wire which forms the bail eye vertically between the ear and the side of the pail at the bottom of the socket. A hole is made in the ear, so that the end of the said wire is bent outwardly and clasps the bottom of the socket tightly.

Claim.—As an improved article of manufacture, a bail ear for buckets and other vessels, made substantially as herein shown and described.

No. 47,574.—CYRUS W. SALADEE, Putnam, Ohio.—*Harness Buckle.*—May 2, 1865.—This invention consists in pivoting the buckle in a groove in the tongue, so that a spring shall make the front end of the tongue snap under the front bar of the buckle, which is provided with a shoot passing through the strap to be held, and takes in a corresponding hole in the tongue.

Claim.—First, constructing a buckle so as to be unbuckled without slackening the strap, in the manner described.

Second, the buckle G in continuation with the tongue F.

Third, pivoting the buckle to the tongue in the manner described.

Fourth, forming the tongue F as a combination of plate A, in the manner described.

First, the stud *i*, or its equivalent, operating as described, in combination with the indentation V.

No. 47,575.—JAMES SARGENT and H. W. COVERT, Rochester, N. Y.—*Lock.*—May 2, 1865.—In this lock there is a series of rotating tumblers surrounded by an opening of magnetized iron. A lever hinged to the bolt near its front end carries an armature which connects the poles of the magnet on its lateral surface, while another armature fitted to embrace its perimeter is suspended in front of the magnet. This latter armature carries a spur, which, when the tumblers are properly set, passes through between the two ends of the ring and into their notches. When the bolt is out it is held there by a trigger, which, operating by gravity, sets against a stock upon the bolt. To retract the bolt the key is inserted and the tumblers properly set; a further movement then forces the hinged lever off, so as to break the connection of its armature with the magnet, whereupon the suspended armature is attracted, and in its movement towards the magnet strikes against the trigger

and turns it so as to remove its arm from behind the stock, while at the same time the spur upon the armature passes into the notches of the tumblers.

Claim.—A magnet employed in combination with the mechanism of a lock in such a manner as to disconnect the action of the dog, or æquivalent, that releases the bolt from the operating shaft or key, substantially as herein set forth.

Also, in combination with the magnet E, the employment of the armatures G H, the former having the dog *g* attached, and so operating in relation to the permutation wheels that when the connection of H is broken that of G will be formed to allow the dog to enter the notches, substantially as set forth.

Also, in combination with the gate I, the shoulders *m* and the cam pin *o*, arranged and operating substantially as described.

Also, the tumbler K in combination with the armature G, substantially as herein set forth.

Also, retaining the permutation wheels in place on their bearing, and preventing them from coming in contact with each other, by means of the grooves J J and pins Z Z, or equivalent, substantially as herein set forth.

Also, the combination of the spring ring *u* and centre *w*, constituting the permutation wheels, substantially as and for the purpose herein set forth.

No. 47,576.—Peter Schutler, Chicago, Ill.—*Machine for Boring Hubs.*—May 2, 1865.—This machine bores the hub by the rotation of the latter rather than of the former. The boring tool is mounted upon a horizontal bed, which is susceptible of an oscillating motion about a centre for the purpose of allowing the tool to be set at any desired angle. With this bed is combined a laterally adjustable tool holder and a longitudinally adjustable carriage. The carriage is provided with a contrivance for throwing it in and out of gear, with a feeding screw for the purpose of feeding the tool up to its work with a slow motion, and retracting with a quicker motion.

Claim.—First, the employment in combination with a machine designed for boring taper eyes or holes in hubs of a horizontal pivoted bed C, or its equivalent, substantially in the manner and for the purpose described.

Second, the employment, in combination with a machine designed for boring taper holes or eyes in hubs, of a laterally adjustable carriage E, and a longitudinally movable carriage D, and a pivoted bed C, all constructed, applied, and operating substantially as and for the purpose set forth.

Third, the employment of rack and pinion *r p* in combination with a feeding screw B, and contrivances for throwing this screw into and out of gear with the carriage D, substantially as described.

Fourth, the vertically sliding half nut *h*, toe lever *i*, weight *w*, shaft *j*, and feeding screw B, in combination with the tool carriage of a hub-boring machine, substantially as described.

Fifth, in combination with the lever *i* and half nut *h*, the adjustable stop H, substantially as described.

Sixth, the boring tool E constructed with a cutter *f*, spiral flange, and a shoulder cutter *g*, substantially as described.

No. 47,577.—Charles A. Seely, New York, N. Y.—*Mode of Amalgamating Precious Metals.*—May 2, 1865.—This invention consists in injecting steam in the bottom of the amalgamating pan, so as to agitate and heat the quicksilver, thereby increasing the affinity of the same for gold and silver, and also making the scattered globules more easy to collect.

Claim.—The injection of steam or water, or both, at the bottom of the mercury in an amalgamating vessel, substantially as described.

No. 47,578.—Thomas Shaw, Philadelphia, Penn.—*Steam Gauge.*—March 2, 1865.—The object of this invention is to register the steam pressure in boilers with unerring accuracy. Its novelty consists in the introduction of an India-rubber tube within a spiral spring, so that through the agency of the tube pressure is indicated.

Claim.—The employment of a gum tube in the manner specified for the purpose set forth.

No. 47,579.—Charles Shirtcliff, Philadelphia, Penn.—*Circular Knitting Machine.*—May 2, 1865.—The object of the depression in the lower plate is to permit any one of the needle levers to be raised at its forward end, in order that a defective needle may be readily removed from the machine without disturbing any other needle or its lever.

Claim.—The plate G and plate G′, with its depressions *d*, arranged and operating in respect to the levers H of a circular knitting machine, substantially as and for the purpose described.

No. 47,580.—Henry Smith, Naubuc, Conn.—*Slides for Carriages.*—May 2, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—The combination of the lever, segment, gears *h* and *g*, pawl and ratchet wheel *k* and *i*, and creeper wheel *m*, with the carriage, substantially as described.

Also, the combination of the guide *n*, plate *o*, and foot lever *q*, with the carriage, substantially as described.

No. 47,581.—Wm. H. Stone, Brooklyn, N. Y.—*Lining for Petroleum Barrels.*—May 2, 1865.—This invention consists in heating the barrels to 180 or 200 degrees, and, while hot, introducing wax, which may be previously melted if desired, and then giving the barrel a rolling and oscillating motion to distribute the wax.

Claim.—The described process of rendering barrels or other packages impervious to petroleum or other similar liquids, by treating them in the manner substantially as herein set forth.

No. 47,582.—A. H. Stratton, New York, N. Y.—*Fifes and Flutes.*—May 2, 1865.—This invention consists in making the instrument with a double tube and two sets of key-holes, so that, by turning the tubes, the key may be changed; and the mouth-piece is also adjusted in the same manner, and lengthened or shortened as required.

Claim.—First, the revolving finger-piece B, with two or more sets of finger holes, in combination with the main barrel A of a flute or fife, constructed and operating substantially as and for the purpose set forth.

Second, the longitudinally adjustable mouth-piece C in combination with the main barrel A of a flute or fife, constructed and operating substantially as and for the purpose described.

Third, the self-adjusting plug *e* applied to the sliding mouth-piece C, in the manner and for the purpose substantially as set forth.

No. 47,583.—Milbern Tibbetts, Lancaster, Ind.—*Apparatus for Shifting Sugar Pans.*—May 2, 1865.—This invention consists of a furnace provided with a pan. The furnace has two railways attached to it, one on each side, and the pan has arms hinged to it, the said arms being grooved wheels, which rest upon the rails. When the lever is depressed the pan is raised above the furnace, and can be moved freely from one end of the railway to the other, and when the lever is raised the pan is lowered upon the top of the furnace.

Claim.—First, in the described combination with a furnace and railway, the mode of elevating the evaporating pan on to the ways by means of the arms D *d* D′ *d*′, wheels E *e* E′ *e*′, levers F G F′ G, and catches H H′, or devices substantially equivalent.

Second, the removable sections *c* and *c*′, arranged and adapted as set forth.

No. 47,584.—T. R. Timby, Saratoga Springs, N. Y.—*Globe Time-piece.*—May 2, 1865.—This invention consists in combining with a globe, revolving once in twenty-four hours under a stationary index, one or more hands, revolving upon a clock-dial, in such a manner that by said clock-dial and revolving hands the local time is indicated in the usual manner, and at the same time the globe and the stationary index afford the means to read off the difference of time in places of different longitude, or the difference of time between any place on the globe and place where the clock is used.

Claim.—Attaching the axis of a terrestrial globe to a dial, and revolving both once in twenty-four hours, substantially for the purposes herein specified, with or without an ordinary clock-dial.

No. 47,585.—Theo. R. Timby, Saratoga Springs, N. Y.—*Globe Clock.*—May 2, 1865.—This invention consists in combining with a globe, revolving once in twenty-four hours under a stationary index, one or more hands, revolving upon a clock-dial, in such manner that by said clock-dial and revolving hands the local time is indicated in the usual manner, and at the same time the globe and the stationary index affords the means to read off the difference of time in places of different longitude, or the difference of time between any place on the globe and the place where the clock is used.

Claim.—A globe, revolving once in twenty-four hours, in combination with a fixed dial and moving hands, substantially in the manner and for the purpose herein shown and described.

No. 47,586.—Frederic Toggenburger, Chicago, Ill.—*Firing Explosive Shells by Clock-work.*—May 2, 1865.—When the gun is fired the pressure of the expanding gases within the gun acts upon a yielding plug in the rear end of the shell, and causes, by means of an intervening mechanism, to set free the action of a spring barrel within the shell, and thus set in motion the clock-work. This motion continues until it sets free the action of a spring which pulls a rod out of a capsule containing fulminating powder, which is exploded by the act and explodes the charge. To determine the time within which the shell is to explode a dial is countersunk into the side of the shell, and provided with a hand indicating seconds. This hand is connected with the exploding machinery, and is set before the shell is charged.

Claim.—First, exploding a bombshell by means of a clock-work applied within said shell, substantially in the manner described.

Second, providing the clock-work used within a bombshell for exploding the same with a regulating apparatus, by means of which said clock-work can be set to explode the shell at a given time.

Third, starting the clock-work within a shell, by which it is to be exploded by the action of the powder-charge which is used in firing the shell from the gun.

Fourth, the combination of the clock-work movement with the rod M and the fulminating capsule for exploding the shell, substantially in the manner described.

Fifth, the combination with the clock-work and the exploding device within the shell of the yielding plug H, by means of which the clock-work is set in motion by the firing of the shell. substantially as herein described.

No. 47,857.—H. TUNISON, Whitehall Grove, Ill.—*Horse-rake.*—May 2, 1865.—This invention relates to a machine for gathering hay in large quantities, and transporting it to the stack or barn.

Claim.—A horse hay-rake, consisting of the body A, provided with the series of teeth *a a*, and provided with the reversible rods *d*, or their equivalents, attached separately, as shown, for the purpose of enabling it to be drawn and operated by animals acting independently at each end, substantially as herein shown and described.

No. 47,588.—CONRAD P. WAGNER, New York, N. Y.—*Lock.*—May 2, 1865.—The principal features of this lock are, first, a series of rotating tumblers, connected by means of concentric tubes with a series of permutation plates lying upon the outer surface of the lock-case; second, enclosing the tumblers in a case separate from the other parts of the lock, the bolt, flattened for that purpose, passing through the case between the bottom thereof and the lowermost one of the series of tumblers; third, a device for preventing the retraction of the bolt, even after the tumblers shall have been properly set, until said device shall also have been properly adjusted; and, fourth, a hollow hinged cover which encloses the permutation plates, and which, when closed, is locked in a peculiar manner.

Claim.—First, the movable stop H H in combination with the longitudinally movable central spindle F, rotating tumblers B B′ B2 B3 B4, permutation plates G′ G2 G3 G4, and tumbler box C C*, substantially as and for the purpose herein specified.

Second. the tumbler box C C*, enclosing the tumblers separately from the other parts of the lock, forming a guide for the bolt D and a bearing for the tumblers and their central spindle, substantially as herein specified.

Third, the sleeve M, with one or more slotted flanges or tumblers M*, and the pin *r* in the yoke L, or its equivalent, applied in combination with the bolt of the lock and with the spindle K, substantially as and for the purpose herein specified.

Fourth, the cover P, for enclosing the permutation plates, secured by means of two or more revolving buttons Q, and catches *u*, substantially as and for the purpose herein specified.

No. 47,589.—HARVEY WATERS, Northbridge, Mass.—*Blank for Scythes.*—May 2, 1865.—This rod or blank, for four or more scythes, is made by rolling out a bar of a width sufficient for two and of a length equal to two or more scythes, one surface being plain or flat, the other somewhat arched at the middle, that is thicker in its middle than at the two edges. Thus rolled, the bar is bent at the middle of its length around so that the plain or flat side of one limb will be close upon the flat surface of the other, but not welded to it. The bent end of this double bar is then swaged so as to make its extremity thinner and broader, giving to it thus a shape not greatly unlike the bit of a rock-drill or a cold chisel.

Claim.—The double rod or blank for two, four, or more plates, when shaped and arranged substantially as and for the purposes specified.

No. 47,590.—HARVEY WATERS, Northbridge, Mass.—*Machine for Rolling Metal.*—May 2, 1865.—The rollers employed have each a series of grooves, which operate in unison with each other in the usual manner, but of which the last pair of the series only give the perfected form to the article, the grooves through which it had previously passed having served successively only to bring the article up by gradual approaches to the finished form. The grooves are so shaped that while that portion of a pair which first nips the metal is formed, so as to impart to the bar at the nipped end a shape approximating more or less toward the true one, that form gradually emerges into that of a plain cylindrical groove, which, while drawing out the bar, simply rounds it. In the first pair of grooves, the emergence into the cylindrical form is found quite near the first or nipping portion, but in each succeeding pair this point of emergence is removed more and more remotely from the biting point, until that pair which immediately precedes the last is arrived at, which latter gives the proper shape to the bar throughout its entire length, the last pair of all serving only to finish it more completely.

Claim.—A system of grooves for drawing and shaping, substantially as and for the purposes specified.

No. 47,591.—J. D. WILBER, Pleasant Plains, N. Y.—*Horizontal Baling Press.*—May 2, 1865.—In this invention a single follower is used for two press boxes. The other portions of the invention relate to arrangement of the parts, as mentioned in the claim.

Claim.—First, the employment or use of two press boxes, placed or arranged in line with each other, in connection with a single follower, operated by four screws, all arranged as herein set forth.

Second, the opening *e*, employed in the described combination, with and relation to the follower D and slots *c* and *d*, to admit of the introduction of the material into the press boxes, without the use of doors, as explained.

No. 47,592.—Erastus S. Woodford, Winsted, Conn.—*Ox Yoke.*—May 2, 1865.—This invention consists in arranging a double spirally-grooved rod longitudinally with the frame of the yoke, connecting the bow blocks, so that either ox, in crowding or hauling, will instantly bring the other ox to the same relative position, whether close together or separated the length of the yoke, thus preventing further efforts to crowd or haul.

Claim.—The spirally-grooved rod D, by which their simultaneous movement is directed, thus adjusting the length of bow by which each ox works.

No. 47,593.—Linn Woodruff, Ann Arbor, Mich.—*Seed Planter.*—May 2, 1865.—For the purpose of scattering the seed evenly, centrally beneath the dropping aperture is placed the point of a cone, the base of which extends to within a few inches of the surface of the soil. This cone is suspended from a point as near as possible to its apex, and is allowed some freedom of motion, so as always to be in the main perpendicular, whatever be the position of the carriage. To thoroughly prepare the ground for the action of the seed drill, the tooth making the furrow is placed within and behind a triangular toothed drag. Behind this tooth and within the drag is placed the aforesaid conical dropper, and behind that the teeth for covering the furrow. Lastly comes an adjustable gauge, the effect of which is to leave the ridge smooth, compact, and even, as well as to gauge the depth of the covering.

Claim.—First, the conical dropping tube A, consisting of the cone *a a*, with the partitions *b b* separating the space between the cone *a a* and its concentric outer covering A into several grooves or channels, for the more effectual scattering of the seed, the whole being constructed and arranged substantially in the manner and for the purpose above specified.

Second, the arrangement of the small triangular drag B B with the teeth *t t*, when placed on each side and in front of the furrow tooth *d* and the covering teeth *e e*, substantially in the manner and for the purposes set forth in the above specification.

Third, the adjustable cross-bar or gauge *c*, when movably attached behind the teeth *e e*, so that it may be raised or lowered to control the depth of working of the teeth *e e*, as described in the specification.

No. 47,594.—Wm. Woods and E. Smith, Worcester, Mass.—*Spring Bedstead.*—May 2, 1865.—In this bedstead two sets of springs, with intervening cross-bars and sockets, are used. This arrangement constitutes the improvement.

Claim.—The combination of the two sets of springs, intervening cross-bars, and sockets, when constructed and operating in the manner and for the purpose of giving ease and buoyancy to the slats, substantially as described.

No. 47,595.—Philander Anderson, assignor to himself and P. K. Bronson, East Avon, N. Y.—*Water Elevators.*—May 2, 1865.—This invention relates to that class of chains used in water elevators, and consists in casting each alternate link with curved lips or clasps, sufficiently open to receive the ends of the other links. When the curved lip, after having been malleablized, is closed up with a hammer, thereby forming a joint similar to a strap hinge.

Claim.—As an improved article of manufacture, the malleable iron square or flat link chain, the links and swivels being constructed and connected in the manner shown and for the purposes specified.

No. 47,596.—Lewis D. Chichester, assignor to himself and C. W. Mills, Brooklyn, N. Y.—*Grain Dryer.*—May 2, 1865: antedated April 15, 1865.—This invention consists of two or more elevators combined with a grain dryer, having hollow walls and a delivery elevator. The elevators and grain receptacle are separated by partitions extending from the bottom nearly to the top; the grain flows into these from the general bin at the bottom, is elevated and cast upon a series of flat inclined shelves, so arranged that it flows from the base of one series upon the apex of the next, and so on, and at the bottom is discharged into its delivery elevator receptacle, and then elevated and delivered; the whole operation going on at the same time. If necessary, the delivery elevator can act independently from the dryer.

Claim.—First, the combination, with a drying or cooling apparatus for grain, of two or more elevators, substantially as described, so that the grain can be passed through the drying apparatus, and again elevated and delivered, or elevated and delivered at once, substantially as specified.

Second, a series of flat drying tables for grain, inclined in alternate opposite directions, and receiving the grain from the bottom of one set of tables upon the apex of the tables below, substantially as specified.

Third, the combination of the series of tables *o p*, inclined in alternate opposite directions with the hollow walls *q t*, forming the inlets and outlets of the air, as set forth.

No. 47,597.—W. R. Close, assignor to himself and G. W. Merrell, Bangor, Maine.—*Hanging Circular Saws.*—May 2, 1865.—This invention consists in having a fast collar upon the arbor, on the outer end of which is cut a screw thread, a nut of equal diameter of the fast collar being screwed upon the arbor. This nut has a flange or shoulder cut down and turned off of the size of the centre hole in the saw, and upon this rests the saw, and by

which it is centred. Outside of the saw and upon this centring nut or collar is also a cut screw thread, upon which is screwed a nut, which holds the saw fast to the centring nut, which can, with the saw, be attached to or taken from the arbor.

Claim.—As my improvement or invention for centring a circular saw, or applying it to its arbor, the combination described, the same consisting of the head *b*, screw *c*, the nut C, and hub B, with its screw *f* and shoulder *h*, such nut C and hub B being provided with the recess *i* and the polygonal head *k*, or their equivalents, and the whole being arranged substantially as specified.

No. 47,598.—ROBERT P. FULLER, Machias, Maine, assignor to HENRY RICHMOND, San Francisco, Cal.—*Pulley Block.*—May 2, 1865.—The object of this invention is to construct ship blocks in such a manner that the cheeks of the same will be prevented from splitting, and to this end the cheeks are arranged with the grain of the wood at right angles with the metallic strap which encompasses the block, the strap being fitted in grooves in the cheeks, so that the outer surfaces of the former will be flush with the surfaces of the latter.

Claim.—The combination of the grooved cheeks A A, straps C C, metallic strap *a a b b'* and hook D, all constructed and arranged as and for the purpose herein specified.

No. 47,599.—THOMAS J. LOVEGROVE, assignor to himself and HENRY BALDWIN, jr., Philadelphia, Penn.—*Borer for Wells.*—May 2, 1865.—The object of this invention is to prevent the jamming of the drill in the well to ensure the turning of the drill between the strokes, and to facilitate the removal of the detritus.

Claim.—First, a drill with two or more cutting edges, sloped from toe to heel, at an angle to its line of vibration, substantially in the manner described, for the purpose of boring a hole of larger diameter than the drill, as set forth.

Second, the combination with the drill of the inclined wings or flanges E E', substantially as described, for the purpose of turning the drill automatically, and of smoothing and rounding the hole, as set forth.

Third, a tubular jar, so constructed as to serve as a pump for removing detritus from the well.

Fourth, a cylinder containing a chamber which serves the double purpose of an air cylinder and a detritus chamber.

Fifth, the combination of a tubular jar and a sand pump, in such a manner that one of the tubes of the jar shall form the induction pipe of the sand chamber.

Sixth, the combination in an instrument for boring wells of a hollow drill and a tubular jar.

Seventh, the combination of a hollow drill, a tubular jar, a sand pump, and a flexible hose or discharge pipe.

Eighth, the combination with a drill of flanges E E' to turn it, and ratchets *d d'* to prevent its backward movement, substantially as described.

No. 47,600.—T. J. LOVEGROVE, assignor to himself and HENRY BALDWIN, jr., Philadelphia, Penn.—*Borer for Wells.*—May 2, 1865.—The object of this invention is to prevent the jamming or sticking of the drill, to rotate it automatically, and to remove detritus from the bottom as fast as formed.

Claim.—First, rotating a boring tool by hydraulic pressure, substantially in the manner described.

Second, the combination with a drill of a tubular jar, rotated by the fluid passing through it, substantially as described.

Third, the combination with a tubular jar, rotated in one direction by hydraulic pressure of a ratchet or other detent to prevent its rotation in the opposite direction, substantially as described.

Fourth, the combination of a rotating drill with a discharge pipe with a swivelling joint, substantially in the manner described, for the purpose of rotating the drill without twisting the pipe, as set forth.

Fifth, suspending and vibrating a rock drill by two ropes, substantially in the manner described, for the purpose of rotating the drill by the reacting twist of the ropes, as set forth.

Sixth, the combination of an automatically revolving drill, with an automatically rotating jar, substantially as and for the purpose set forth.

No. 47,601.—T. J. LOVEGROVE, assignor to himself and HENRY BALDWIN, jr.—Philadelphia, Penn.—*Rock Drill.*—May 2, 1865.—The objects of the invention are to prevent jamming or sticking of a boring tool, to rotate it automatically, and to remove detritus as fast as formed.

Claim.—First, a rock drill, perforated from its face to its head, and having cutting edges around the perforation, in combination with a valve, substantially as described, for the purpose of removing the detritus through the drill.

Second, a drill having part of its cutting surface radial to its centre, and at a right angle to its line of vibration, and the other part sloped downward from heel to toe, at an obtuse angle to its line of vibration, substantially in the manner described, for the purpose of cutting a hole of a diameter greater than that of the drill, as set forth.

Third, a drill having two or more cutting surfaces on one side, and a single cutting surface in a higher plane on the other, substantially as described, for the purpose of cutting a core with the polygonal surfaces to be removed by the single cutter.

Fourth, a drill having cutting edges on different planes, the one horizontal, and the other at an obtuse angle thereto, substantially as described.

Fifth, the combination with a drill, having its cutting edges in different horizontal planes of the wings or flanges for rotating the drill, substantially as described.

No. 47,602.—JOHN W. MILLET, Bachelorsville, N. Y., assignor to BENJAMIN R. JENKINS and CYRUS SUMNER, Edinburg, N. Y.—*Machinery for Forming Baskets.*—May 2, 1865.—This invention consists in having in a suitable framing a conical revolving drum, in the heads of which are channels to receive the ribs or upright supports of the basket, and a rest from which the bands which go around the basket are fed and guided to their proper places by means of a spring and lever over the conical drum, where they are nailed fast to the ribs or uprights of the basket.

Claim.—First, the conical drum F, provided with the channels or groves *f f f f*, and alternate projections *g g g g*, in combination with the chuck G, and flange-plate L, substantially as shown.

Second, the follower M in the movable rest pressed against the movable drum by means of weights in the manner described.

Third, the vibrating lever R, and the guide spring T, substantially and for the purpose specified.

No. 47,603.—JOHN NELSON, assignor to himself and WALES NEEHAM, Rockford, Ill.—*Device for Securing Grain Bands.*—May 2, 1865.—This invention consists in securing the bands by means of metal strips of suitable length, bent into the form of the letter V, which are made to embrace and clamp the lapped ends of the cord bands with sufficient force to prevent their slipping. They may be compressed upon the band by a pair of pincers.

Claim.—Securing the ends of the twine or cord bands used for binding sheaves of grain by means of metallic clamps, applied in the manner, without any knotting of the band in fastening, as herein set forth.

No. 47,604.—EZEKIEL PHILLIPS, Blackstone, Mass., assignor to himself and D. B. POND, Woonsocket, R. I.—*Machine for Cleansing, Dressing, and Cutting Flax, &c.*—May 2, 1865.—The object of this machine is to reduce long fibres into lengths, as well as to cleanse and beat them preparatory to spinning, &c. The longer spring tooth in the sectional gear through which the knife is periodically actuated is designed not only for the purpose of ensuring the engagement of the toothed arc with the teeth of a gear, but of preventing a tooth of the arc from so riding on or impinging against a tooth of said gear as to break a tooth or damage the machine.

Claim.—The combination or machine as consisting not only of the intermittent feeding mechanism, and the movable knife or mechanism for cutting off the fibres in the manner as described, but a stationary grid or grating (arranged in the case as set forth) and a rotary beater, so arranged as not only to operate with the knife, and cause it to cut off the flax or fibrous material, as explained, but to beat and comb or dress it, and subsequently discharge it from the machine, substantially as specified.

Also, the use in this particular class of machines the sectional driving gear *l*, as made not only with an arc of teeth, but with an auxiliary tooth, supported by a spring, arranged with respect to such arc substantially in manner and for the purpose as hereinbefore explained.

No. 47,605.—EDWIN REYNOLDS, Mansfield, Conn., assignor to himself and BENJAMIN GAGE, Boston, Mass.—*Machine for Cutting Nails.*—May 2, 1865.—This invention consists in the arrangement of a series of pairs of cutters, whereby a wide sheet of metal can be cut at each operation into as many nails as the united length of which will reach across said sheet, and without any lateral movement thereof, and the heads and points of the nails cut therefrom alternating in opposite directions with each cut of the machine.

Claim.—As an improvement in nail-cutting machines their organization with two pairs of cutter heads, each one of which carries two or more cutters, the whole being so arranged as to operate across the entire width of a sheet of metal, to cut from the end thereof simultaneously two or more nails, without giving to the nail plate any other movement than its progression or feed.

No. 47,606.—WM. T. SLOCUM, assignor to JAMES S. MASON & CO., Philadelphia, Penn.—*Manufacture of Metal Boxes.*—May 2, 1865.—This improvement consists in forming on one end of the narrow strip which constitutes the lid of the box a pointed triangular spur, and a short distance behind it in the body of the strip another by cutting a V-shaped slot, with its base towards the end, and turning both spurs up to a right angle with the body of the strip. The spurs are then inverted in corresponding transverse slots in the other end of the strip, and both then straightened out to be near their original position, and forming a lock joint.

Claim.—Connecting together the ends of a strip A, by inserting the lips *a a'* at one end of the strip through the slots *e e'* at the opposite end, and bending them down against the inner side of the slotted end, when the said lips and slots are formed substantially as described.

No. 47,607.—ABBIE J. SMITH, Litchfield, Conn., administratrix of the estate of A. P. SMITH, deceased.—*Pneumatic Churns.*—May 2, 1865.—This invention consists in the application of a double acting bellows, operated by a crank and pitman connected with the driving shaft, in combination with a hollow vertical shaft, which receives the wind from the bellows and forces it down into the cream, and distributes it through a series of small apertures in the underside of a tub placed centrally on the vertical hollow shaft, at right angles, so that when rotated it forms one of the beaters to agitate the cream as well as to distribute the air through it.

Claim.—First, the double-action bellows, operated by a crank and pitman from the driving shaft, the vertical rotating hollow shaft having holes in its lower bearing to receive the wind from the bellows and distribute it in the cream, in the manner herein described.

Second, the valve *i i* in the recess *h*, and the air chamber *g* in combination with the induction holes *o o* in the bearing of the hollow shaft F, for the purposes set forth.

Third, the horizontal air tube I, with its openings *n n*, in combination with the beaters *m m*, operating in the manner herein described, for the purposes specified.

No. 47,608.—J. N. ADAMS, Birmingham, Iowa.—*Corn Planter.*—May 9, 1865.—This invention relates to a corn planter of that class in which the seed-distributing apparatus is connected with or attached to wheels, and it consists in a novel construction and arrangement of said seed-distributing apparatus, whereby the plungers, working in pairs, convey the seed to the ground and press it into the soil.

Claim.—The plungers F placed at the outer side of the wheels B, and provided with the notches or seed cells *b*, in connection with the springs K, hoppers G, and inclined planes or surfaces H, all arranged to operate substantially as and for the purpose herein set forth.

No. 47,609.—LEONARD ATWOOD, Norwich, Conn.—*Oil-boring Apparatus.*—May 9, 1865.—This invention consists in the construction and combination of a pile driver and drill for boring oil and other wells, with devices to operate, hold, and rotate the drill rod, and in combination with the latter, which consists of a hollow tube or rod to force water by any usual process down through the hollow rod to the bottom of the well, so that the debris or detritus may may be expelled therefrom.

Claim.—First, the combined pile driver and boring apparatus, when made, constructed, and operated in the manner and for the purpose herein set forth.

Second, the combination of a hollow tube and drill attached thereto, through which water can be forced by any usual power when said tube, rod, or drill has at its lower end slots or holes through which the water is forced into the well, expelling therefrom the debris or detritus from the well upon the outside of the drill rod or tubes, when the same is combined with the gear wheels C6 C5, drill rotating apparatus F *e f g*, when constructed in the manner and for the purpose herein described.

Third, the movable cross-head G, pitman rods I, guides G', and standards B, in combination with the levers J, in the manner and for the purpose herein described.

Fourth, the adjustable stops H H, in combination with the levers J J, in the manner and for the purpose herein described.

Fifth, the hinged clamps K K, in combination with the cross-piece U and drill rod D, in and for the purpose herein described.

Sixth, the movable collar V in drill rod D, and combined therewith, and with the arm F, ratchet and pawl *g*, friction roller *e*, and curved plate E, in and for the purpose herein described.

No. 47,610.—EDWIN P. BAUGH, Philadelphia, Penn.—*Mode of Manufacturing Superphosphate of Lime.*—May 9, 1865.—This invention consists of a tank, with an apex, near which is a vessel containing sulphuric acid. The bones, &c., are shovelled in through said aperture, and a stream of sulphuric acid allowed to flow in at the same time. The mass, after being converted into the superphosphate of lime, is discharged, and is ground by a roller, after which it is ready for use.

Claim.—First, converting bones and other offal and guano into superphosphate of lime, by causing the same to be thoroughly mixed with an acid in a closed or nearly closed tank, substantially in the manner described.

Second, the combination of the spiked roller and concave, or other equivalent, disintegrating mechanism with the said tank.

No. 47,611.—EDWIN P. BAUGH, Philadelphia, Penn.—*Method of Treating Manure.*—May 9, 1865.—This invention consists in passing the gases arising from burning fuel through the material to be treated. To accomplish this a chamber, having a chimney and hopper, is provided with rollers, carrying endless belts of wire gauze or similar material.

The chamber is provided with a fireplace and door. The material is supplied through the hopper, and passed from one belt to another, and is finally deposited on the floor of the chamber, near the door.

Claim.—Drying the sewerage of cities, poudrette, guano, and similar substances used as fertilizers, by passing through a mass of the material to be dried the products of combustion from any adjacent fireplace.

No. 47,612.—CHARLES WILLIAM BETZELL, Philadelphia, Penn.—*Trusses.*—May 9, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—First, the pad *a*, formed with a prolongation *b*, and fitting the inguinal region in such a way and having such a shape that the movements of the thigh or body cannot move it from its proper position, as herein set forth.

Second, the spring *d*, when employed in connection with the pad *a*, in the manner and for the purpose herein described and represented.

Third, the strap *b'* extending from the prolongation of the pad between the thigh and across the gluteal muscle, and hitched or fastened to the button *c* on the spring *d*, for the purpose of preventing any upward movement of the pad, substantially as set forth.

Fourth, the strap or girdle *e f*, occupying a position above the crest of the hip bone, extending across the abdomen, and fastened to the button *a'* on the pad *a*, to prevent the displacement of the pad in a downward direction, and operating in connection with the strap *b*, to prevent lateral displacement.

No. 47,613.—JESSE N. BOLLES, Baltimore, Md.—*Coupling Shafts of Boring Tools.*—May 9, 1865.—This mode of coupling is applicable more particularly to tubular shafts, and consists in threading the end of each tube on the inside to the extent of about one inch and a half, and upon the outer surface to the extent of four inches or thereabouts, the former being left-handed and the latter right-handed. The two tubes are screwed upon a hollow internal nipple until they meet and make a close joint, and this joint is afterwards covered by a lock nut about four inches long, which in turn is supported at one end by a jam nut, from which radiate a series of wings which serve to keep the tube or rod central in the hole made by the drill.

Claim.—The adaptation of a safety joint to either round, square, hollow, or solid boring, or drilling rods (and the various tools connected therewith) for boring or drilling rods used in the construction of artesian wells, oil wells, and for other purposes, so adjusted with right and left-hand threads, or outer and inner screws of different sizes (whether right or left-hand) with nipple, lock nut and collar, so as to render disconnection of the rods impossible while in operation, as herein described, or any other mode substantially the same, which will produce the intended effect.

No. 47,614.—WILLIAM H. BOYLE, Cazenovia, N. Y.—*Corn Planter.*—May 9, 1865.—This invention relates to a device for planting corn in hills and in check rows, and it consists in the employment or use of two slides in connection with a drop bar, operated through the medium of its own gravity or a spring and wiper wheel, or cam driven from one or both wheels of the machine, whereby the corn may be dropped at equal distances apart with certainty and precision.

Claim.—The two slides E E provided with the shoulders or projections *c* and acted upon by the springs *b*, in connection with the drop composed of the pivoted block I in the slide G, acted upon by the wheel L provided with an arm *i*, and all arranged to operate in the manner substantially as and for the purpose set forth.

No. 47,615.—T. W. BROWN, Cambridge, Mass.—*Ash Sifter.*—May 9, 1865.—This invention consists of a square wooden box, in which is an ordinary reciprocating sieve. This box has a hinged removable cover with a handle on top, and at the back of the box and beneath the sieve is a door through which the ashes may be removed.

Claim.—The combination of the cover B, hinged at *e*, and having a downwardly projecting front A', the sieve E, handle F, and back door D, all the said parts being constructed and arranged as and for the purpose herein specified.

No. 47,616.—F. C. BROWNELL, East Orange, N. J.—*Ink Well.*—May 9, 1865.—This invention relates to an improvement in ink wells for school desks, by which the well can be locked and unlocked by means of a screw driver, or similar instrument, and at the same time fastened to the desk or table.

Claim.—First, constructing an inkstand so that its lid or pen-hole cover cannot be opened without moving both vertically and horizontally, or in two different directions, substantially as set forth.

Second, constructing an ink well so that its lid or cover for the pen-hole may be locked or unlocked by means of a key or other suitable instrument, substantially as and for the purposes specified.

Third, the use of an oval-shaped flanged ring or socket, in combination with an ink well or its cover or top, constructed so as to be fastened to or loosened from a desk by turning, substantially as specified.

Fourth, constructing an ink well whose top or cover can be fastened to or loosened from a desk or socket by turning, with a lid or pen-hole cover so constructed that it may be used as a means of turning the same, substantially as and for the purposes set forth.

No. 47,617.—L. D. Bunn, Morristown, N. J.—*Refrigerator.*—May 9, 1865.—This invention is clearly set out in the claim.

Claim.—First, a refrigerator constructed with double air-inclosing walls, and adapted for refrigerating meats and other articles, when the exterior surface of the air-inclosing double wall is covered with felt, cloth or flock, or other similar material, substantially as and for the purpose described.

Second, the arrangement of chamber G, ice-chamber E, and a cooling apartment F, for containing the articles to be refrigerated, substantially as specified.

No. 47,618.—Peter S. Carhart, Collamer, N. Y.—*Cultivator.*—May 9, 1865.—This invention consists in connecting a plate to the shares of a cultivator, and attached to a rod at one end, and at the other to a lever, for the purpose of adjusting the depth of penetration of the shares into the ground.

Claim.—The adjustable pivoted soles or plate D, attached to two or more of the shares B of the cultivator, and arranged with levers F, or their equivalents, substantially as and for the purpose specified.

No. 47,619.—Thomas H. Clark, St. Louis, Mo.—*Boiler Furnace.*—May 9, 1865.—In this furnace several boilers are arranged in a horizontal plane and surrounded by flues made concentric in their cross-section with the bottoms of the boilers, and which extend beneath said boilers lengthwise, and are separated from each other by partitions extending part way up the sides of the boiler in the chamber between each pair. A channel in the front part of furnace extends at right angels through partitions and flue passages, and is supplied with external air to assist combustion by ducts from a supplemental channel. A chamber in the rear extending the width of the furnace, and supplied with cold air, receives the products of combustion, whence they flow back and forth through the boiler and escape.

Claim.—The combination in a boiler furnace where several boilers are arranged in the same horizontal plane, of flues B made concentric in their cross-section with the bottoms of the boilers, and which extend beneath the boilers in the direction of their length, and are separated from each other by ridges A, with the transverse channels C C′, and air channels D D E E′, substantially as above described.

No. 47,620.—John Clute, Cohoes, N. Y.—*Knitting Machine Burr.*—May 9, 1865.—This invention consists in the use of wings or sinkers, provided with a parallel projection or tongue, in combination with a wheel or bush, furnished with a series of oblique radial slots and with a circular groove turned or otherwise produced in the rim of the wheel from the inside or outside in such a manner that the shoulders of the wing formed on the sides of the tongue bear against the bottom of the radial slot, and the tongue fits into the circular groove, and by these means the said wing is held securely in its position, and very little solder is needed to fasten it to the wheel or bush. The wings can be punched out, and if the radial slots are cut in to the same depth precisely, no turning of the wings is required after the same have been secured in the wheels.

Claim.—First, making the wings of a knitting machine burr with shoulders *d* and parallel centre tongues *c*, substantially as and for the purpose set forth.

Second, the combination of the shoulders *d* and parallel tongues *c* of the wings, with oblique radial slots *a*, and a circular groove *b* in the wheel A, said groove being turned in the wheel either from the inside or outside, substantially as and for the purpose described.

No. 47,621.—Ebenezer Danford, Geneva, Ill.—*Steam Engine.*—May 9, 1865.—This invention consists of a bed plate which has upon each end of it two hemispheres, one above and the other below the plate; that portion of the plate which is between the hemispheres being cut away so as to leave a free communication between the two. Located centrally upon the upper hemisphere are two cylinders in which is a single acting piston upon which the steam acts as it is generated in the lower hemisphere, which is accomplished by placing the whole structure directly over a furnace in which a fire is kindled and heating them to the required temperature, when by the action of the pumps, which are worked by the engine, a given quantity of water is injected which is immediately flashed into steam and acts upon the piston as above stated, and this operation is repeated at each stroke of the pistons.

Claim.—First, attaching the hemispheres (or the upper and lower chambers of other form) to the upper and lower sides of the bed plate.

Second, placing the generator immediately over the fire, with the cylinder in immediate connection therewith, when the said generator is used as a chamber in which a portion of water is flashed into the steam for the purpose described.

Third, the combination of the generator, the cylinder and the interposed slide-valve, which is actuated so as to open and close the passage S at the specified times, for the purpose described.

No. 47,622.—JOHN R. DAVIS, Bloomfield, Iowa.—*Corn Planter.*—May 9, 1865.—The object of this invention is to produce a contrivance whereby the runners of a corn planter may be more readily adjusted to work at any required depth, and effectually held in either of the various positions to which it may be raised or lowered.

Claim.—In combination with the wheel frame A, runner frame B, rigid tongue D, and rigid lever E, the lever F, fulcrumed by the link *e* to the rigid lever E, connected loosely at its lower end to the frame A by the link *f*, and held at its upper end by the notched bar G *g*, spring F′, and catch *f*, all the said parts being constructed and arranged to operate in the manner and for the purposes herein specified.

No. 47,623.—ALVAH D. DREW, Dixon, Ill.—*Pattern for cutting Boots.*—May 9, 1865.—This invention consists of two pieces of sheet metal of rectangular form connected together by hinges, and two other pieces of the same material attached to and on the former, in such a manner as to be capable of being adjusted laterally, one of the over pieces having a foot portion provided with a wing connected to it by means of hinges.

Claim.—An adjustable pattern composed of two parts or plates, connected together and arranged substantially as shown, for the purposes of cutting leather for boots, in the improved or patented form or style specified.

No. 47,624.—L. DUBERNET, New York, N. Y.—*Portfolio Stand.*—May 9, 1865.—This invention consists in a portfolio stand, the side wings of which can be turned down and adjusted in any desired inclination, in such a manner that whenever it is desired to examine the contents of one or more of the portfolios resting on the stand, one or both wings can be turned down to a horizontal or inclined position, and the portfolio can be opened without removing it from the stand, thereby saving much abor and time, and much tear and wear to the portfolio.

Claim.—A portfolio stand A, with folding side wings *c*, made adjustable by spring catches and serrated segments, or their equivalents, constructed and operating substantially as and for the purpose set forth.

No. 47,625.—JAMES P. EGAN, Zanesville, Ohio.—*Lamp Burner.*—May 9, 1865.—This invention consists in a combination of a plate with an oblong opening, a corrugated lip on each side flaring flame guides, and a cap or deflector, arranged so as to be applied to the top of a wick tube.

Claim.—The combination of the plate A, provided with openings *l*, and an oblong opening *a*, with a corrugated lip *a**, at each side of the latter; the curved or floating channels or guides B B, and the cap C, having openings *d* at its sides, and a slot *c* in its upper or face side, all constructed and arranged to be applied to a wick tube of a lamp, to operate substantially as and for the purpose herein set forth.

No. 47,626.—WILLIAM B. EMERY, Albany, N. Y.—*Cotton Gin.*—May 9, 1865.—The object of this invention is to enable the ribs to be fitted to the saws with greater facility and to be adjusted individually when necessary; and, by means of the scannions and adjusting screws, to permit the hopper to be moved to the right or left, when all the ribs require to be moved in either direction.

Claim.—Fastening the ribs of the breast to slotted plates or bars, in the manner and for the purpose substantially as described.

No. 47,627.—ROBERT and HENRY V. FARIES, Indianapolis, Ind.—*Steam Generator.*—May 9, 1865.—This invention consists in the arrangement of circular and semicircular pipes secured together with bolts, and provided with transverse openings in the eyes which form the communication between the adjacent sections of pipes and give a free passage to water and steam through the entire structure. These coils are arranged one within the other and the whole covered with a casing which terminates at the top in an up-take for the unconsumed products of combustion. The grate is placed within the interior coil, and a portion of each coil is cut away to allow of access to it. From the furnace the products of combustion pass around the pipes upon all sides, and finally pass up through the up-take, and are discharged into the atmosphere.

Claim.—First, a steam generator constructed of rings of pipes A, communicating with each other through transverse holes or eyes *a*, in the manner and for the purpose substantially as set forth.

Second, the combination of two or more coils A D, communicating with each other by eyes *a b*′, and pipes *c d*, substantially as and for the purpose described.

Third, the deflecting plates *f g*, in combination with the coils A D, applied and operating substantially as and for the purpose specified.

Fourth, the dovetailed flanges *i*′, and frame *i*, in combination with the pipes A, and fire door F, constructed and operating substantially as and for the purpose set forth.

No. 47,628.—REUBEN FINK, Batavia, Ill.—*Carriage Jack.*—May 9, 1865.—The object of this invention is to obtain a simple and efficient jack, which may be applied to the axles of

either light or heavy wheel vehicles, and both to the front and back axles of the same vehicle, for the purpose of raising the axles to admit of the ready removal of the wheels.

Claim.—First, the lever C, in connection with a fixed bearing or a sliding one F, bar D, and notches *b*, in the base A, all arranged substantially as and for the purpose specified.

Second, the cord or chain E, connected to the bar D, and lever C, substantially as and for the purpose set forth.

No. 47,629.—WILLIAM GASKILL, Cincinnati, Ohio.—*Hemming Guide.*—May 9, 1865.—The pieces composing the double volute are united near the interior of the scroll; the inner one has a prolongation extending beyond the outer one, and which, in connection with the wings of each piece, serve to spread the cloth and prevent its entering the scroll in an uneven or puckered condition.

Claim.—First, the hemming guide or scroll composed of the attached interconvoluted and winged plates A *a*, and B *b*, for imparting a double tuck or fold to the edge of the stuff, substantially as set forth.

Second, the plate A *a* and B *a*, and the central prolongation G, frame *d*, combined and operating as set forth.

No. 47,630.—WILLIAM GASKILL and GEORGE H. KNIGHT, Cincinnati, Ohio.—*Hemming Guide.*—May 9, 1865.—The object of the abruptly swelling head F is the more effectually to secure the smoothing of curls, creases, or wrinklets in the cloth before it enters the hemming scroll. By screwing the head nearer to or further from the scroll, or by reversing its ends, it may be adapted to different kinds and thicknesses of material.

Claim.—First, the provision at the receiving end of a hemming scroll of the abruptly shouldered axial head or knob F, of diameter greater than that of the outer convolution of the scroll, for the automatic cross crimping of the cloth edge, in the act of entering the scroll, substantially as set forth.

Second, a hemming scroll, provided, at its receiving end, with the screw-threaded axial prolongation *f*, having the adjustable head or knob F, as set forth, or its equivalent.

No. 47,631.—RICHARD J. GATTING, Indianapolis, Ind.—*Battery Gun.*—May 9, 1865.—This gun belongs to the class of many-barrelled field pieces, and consists of a series of barrels mounted on a central shaft or spindle and revolved by suitable gear wheels and hand crank. The charges or cartridges are automatically fed into the chambers of the barrels successively, and the several hammers are so arranged in connection with the barrels, that the whole operation of loading, closing the breech, discharging, and expelling the empty cartridge cases, is conducted while the barrels are kept in a continuous revolving movement.

Claim.—First, making the series of barrels with their appropriate locks and cartridge cavities to revolve on an axis, while the requisite motions to perform the loading directly into the rear end of the barrel, exploding, and the cartridge case retracting operations, are retained by the impingement of points on the revolving mechanism, upon fixed spirals, cams, or inclined planes; these several operations being performed consecutively without stopping the rotation of the barrels, when the gun is in operation.

Second, the locks, figures 12 and 13, which revolve with the barrels and breech, and are operated by the cam faces and springs during their revolution.

Third, the cam ring, figure 5, which is rigidly attached to the diaphragm of the stationary casing, and which, by means of its cam faces, controls the longitudinal reciprocating motions of the locks by means of the lugs and the impingement of the butt ends of the lock upon it, substantially as described.

Fourth, the caps to be placed over the cavity in the carrier to shut off the feed, substantially as described.

No. 47,632.—HARVEY GOEBEL, New York, N. Y.—*Hemmer for Sewing Machines.*—May 9, 1865.—The centre guide is solid and tapering towards the delivering end of the scroll, thus not only forming at its junction with the scroll a positive guiding angle, which restrains the cloth from folding upon itself beyond the required degree, but also serving to stretch out and smooth the cloth as it enters the scroll.

Claim.—In combination with a cone-shaped scroll, the centre guide C, constructed and operated as and for the purposes specified, substantially as described.

No. 47,633.—HENRY A. GOUGE, Brooklyn, N. Y.—*Apparatus for Ventilating.*—May 9, 1865.—Attached to the wall of a room, or inside the wall, or outside, and communicating with the external air, is a tube with an opening near the floor; at a point above is a chamber in which a gas jet is burned, and, under the burner, a diaphragm formed of four pieces of metal or other suitable material converging towards and uniting with each other around the gaspipe. The circulation flows through the lower opening, and up, around, and over the diaphragm into the shield above the gas burner and through the tube. In the pipe above this chamber are any desirable number of openings and registers.

Claim.—First, the apparatus described, when constructed to promote ventilation, with substantially the parts, operating in substantially the manner explained.

Second, the inclined plane, current controller E, arranged substantially as and for the purpose shown.

No. 47,634.—David M. Graham, Evansville, Ind.—*Apparatus for Generating Gas from Petroleum.*—May 9, 1865.—This invention consists of a generating vessel surrounded by a casing, and communicating with an oil reservoir by means of a pipe. Directly under the generator is an ordinary gas burner, which is connected with the reservoir, and also the pipe leading from the gas holder. The generator is heated by means of the burner, which is supplied with oil from the reservoir, and when sufficient gas has been generated the supply of oil is cut off from the burner, and the gas is turned on and ignited. The gas is collected in reservoirs, and from thence supplied to different parts of a building.

Claim.—First, heating the generating chamber A from the oil in the receiver C, through an ordinary gas burner *a'*, for the purpose of generating gas for the continuation of heat by gas alone from the gasometer D through and by the same burner, substantially in the manner as herein set forth.

Second, the receiver C, gas burner *a'*, and pipe *b*, in combination with the generating chamber A, whereby the same is heated by the oil, substantially in the manner and for the purpose as herein set forth.

Third, the gasometer D, piping or tube *c*, and gas burner *a*, in combination with the generating chamber A, whereby the same is heated by gas, substantially in the manner and for the purpose as herein set forth.

Fourth, the cylindrical chamber B, in combination with the generating chamber A, whereby the heat is condensed and retained around the same, substantially in the manner as herein set forth.

Fifth, the gasometer E, in combination with the generating chamber A, whereby an additional power is given to force the gas through distributing pipes, in the manner as herein set forth.

No. 47,635.—Loring M. Guiteau, Batavia, N. Y.—*Horse-shoe.*—May 9, 1865.—This invention consists in constructing a horse-shoe of V-form in its transverse section, so that a sharp edge will be formed all around the bottom of the shoe, in order to prevent slipping and to avoid the use of calks; and having the shoe composed of two equal parts, connected at their front ends by a joint, which is at the centre of the front part of the hoof, in order to admit of the shoe expanding under the growth of the hoof; the shoe being formed with oblique holes through which the nails pass from the inner side of the shoe into the hoof; the heads of the nails being above the sharp bottom of the shoe.

Claim.—First, a horse-shoe constructed of V-form in its transverse section, substantially as described.

Second, constructing the shoe of two parts A A, of V-form in their transverse section, and connected by a pivot or joint to admit of the expansion of the shoe under the growth of the hoof, as set forth.

Third, the oblique nail holes *d*, in combination with the transverse V-form of the shoe and the two parts thereof connected by pivot or joint, substantially as specified.

No. 47,636.—Samuel Harris, Rochester, Mich.—*Rotary Steam Engine.*—May 9, 1865.—This invention relates to the arrangement of parts which consist in a cup-shaped disk mounted on a shaft, and a shaft similar to the above, except that it is made hollow and has protruding from its inner ends two or more arms crossed at their outer ends, through which the steam passes and impinges against buckets on the inner periphery of the disk above referred to, inside of which these arms revolve. This arrangement causes the disk to revolve in one direction, while the arms revolve in the opposite one, by which means the direct force of the steam is applied to the disk and the reactionary force is exerted upon the arms, and both are used to drive the machinery. Provision is made for admitting steam to the hollow shaft through a stationary pipe, so arranged as to prevent leakage of steam between the two.

Claim.—First, the combination of the arm F with the shaft D, constructed and operating substantially as described.

Second, the arrangement of the arms E E' on the shaft D with the cupped disk C, its buckets and flange C', the whole constructed and operated substantially as described.

No. 47,637.—Martin Hayden, Rochester, Mich.—*Seed Planter.*—May 9, 1865.—In this machine a pinion, connected with the draught wheel, moves by a wrist pin two levers. One lever draws out from the seed box a little cup, which is carried by the dropping tube and inverted by means of a pin running in a slanting slot. The other lever forces a plunger through the seed tube. This plunger, by means of a cam, opens and shuts a valve in the tube.

Claim.—First, the adjustable or movable bar X provided with the tooth *u*, in combination with the pinion G having a vacant or absent tooth and provided with a notched plate H, for the purpose herein set forth.

Second, the lever I, arranged and combined with the pinion G, plunger rod K, valve shaft N, and seed cup Q, to operate substantially as and for the purpose specified.

Third, the placing of the seed cup Q on an axis *e* provided at one end with a crank *i*, in connection with the curved slot *j* in the bar *k*, for the purpose of tilting the seed cup, as described.

Fourth, the combination of the valve M, plunger rod K, seed cup Q, when arranged to operate in the manner substantially as and for the purpose set forth.

No. 47,638.—Amariah M. Hills, Hockanum, Conn.—*Lamp Shade.*—May 9, 1865.—This invention relates to a shade or reflector for an ordinary portable lamp, to relieve the eyes from the flame and to throw the light down upon the work or article looked upon. The object of this invention is to obtain a shade which may be readily applied to and detached from the lamp, and one which will not render the room so dark as the ordinary shades in use.

Claim.—A lamp shade, composed of paper or other suitable material, made in the form of a frustrum of a cone or other approximate shape, and fitted on a horizontal metallic rim or band, which is secured to a vertical extension support, having a clamp at its lower end to fit upon the neck or socket of the lamp-burner thereof, substantially as herein set forth.

Also, the particular manner of constructing the clamp, as herein shown and described, to wit: of a spring, bent so as to form rather more than a semicircle, and having levers or finger pieces attached for the ready adjustment of the clamp to the lamp or burner, as described.

No. 47,639.—A. A. Heath, West Greenville, Penn.—*Harvester.*—May 9, 1865.—This invention relates to an improvement in the sickle-driving mechanism, whereby the machine is rendered capable of being readily turned and backed, and the parts rendered durable and not liable to catch the cut grass or grain as the machine is drawn along in order to perform its work. The invention also relates to a means for raising and lowering the finger bar and sickle, and to the construction and arrangement of the sickle and manner of applying the pitman thereto.

Claim.—First, the combination of the collar *b* of the bevel wheel H, pinion shaft G G, and clutches I I, arranged substantially as and for the purpose herein set forth.

Second, the caster wheel C, attached to the frame O, applied to the main frame A of the machine, substantially as shown, in combination with the lever P applied to the machine, substantially as shown, to operate in the manner as and for the purpose specified.

Third, the combination of the pitman N, pendulous bar X, standard W, link *n*, and sickle *y*, arranged and operated as and for the purpose described.

No. 47,640.—E. Hodgkins, Carthage, N. Y.—*Washing Machine.*—May 9, 1865.—This invention consists of a rocking or oscillating tub, divided in the centre by vertical bars, in combination with stationary arms, to which are attached gratings, against which the clothes are beaten by the rocking of the tub.

Claim.—An oscillating tub, constructed and operated as described, in combination with radial arms E and fixed slats *b* and grating *a* with pivots F F, as above set forth.

No. 47,641.—James Hollingsworth, Chicago, Ill.—*Cultivator.*—May 9, 1865.—In this machine the forward end of the plough beam is of steel, and by its elasticity brings the plough in place after being turned to either side. The rock shaft for elevating the rear of the plough beam is so arranged that the operator may use either his hand or his foot, at pleasure, or may use both.

Claim.—First, the use of a spring shovel beam, which will admit of a lateral swinging movement of the shovels, substantially as described.

Second, constructing cultivator shovel beams of wood and metal, substantially as described.

Third, the rock shaft E provided with loose arms *c d* and lever E, for enabling the attendant to elevate the shovel beams singly or together, at pleasure, substantially as described.

No. 47,642.—Nelson Homes, Laona, N. Y.—*Mop Head.*—May 9, 1865.—This invention consists in the means for moving the adjustable bar or jaw of the mop head, whereby the same may be readily moved by securing the mop in the head and releasing it therefrom, and at the same time preventing it from being moved casually.

Claim.—The screw C, in connection with the nut B and sleeve G, the latter being provided with ratchet teeth *c*, and arranged on the part F of the screw rod with a spiral spring H, the part F being provided with slots and notches to receive the spurs of the sleeve, and connected with the jaw I, as shown, and the jaw provided with ratchet teeth *b*, all arranged substantially as and for the purpose set forth.

No. 47,643.—Walter W. Jerome, Rochester, N. Y., and Lewis K. Cole, Syracuse, N. Y.—*Lock Valve for Canal Gate.*—May 9, 1865.—This invention consists in moving the rods which open and close the valves of lock gates by means of levers, to each of which is firmly fastened a wheel, so that the bolt which forms the fulcrum of said levers shall pass through a hole in the centre of the wheel, with two grooves in its edge, each groove to contain a chain, one end of which is attached to the wheel, and the other end to a projection on the rod, in such manner as that when the lever is turned the rod shall be moved so as to open and close its valve.

Claim.—The combination and arrangement of the wheel W, the two chains C C′ provided with screw shanks and nuts, the rod R, and the lever L, constructed and operating in the manner and for the purposes described.

No. 47,644.—JAMES D. JONES, Pittsburg, Penn.—*Horse-rake.*—May 9, 1865.—This invention relates to the construction and arrangement of the several parts as indicated by the claim.

Claim.—The arrangement of the flexible seat *g*, levers *r s* and *t*, ratchets 11 and *j*, adjustable set screw *n*, regulating link 5, axle *a*, wheels *b* and *b′*, and teeth *l*, the whole being constructed, arranged, and operating substantially as and in the manner herein described and for the purpose set forth.

No. 47,645.—M. KLEEMAN, Columbus, Ohio.—*Setting and Adjusting Glaziers' Diamonds.*—May 9, 1865.—This invention consists in making the shoe adjustable upon the bar, so as to guide the diamond at the proper slope; and in making a cavity in one side of the shoe to guide the diamond in curves.

Claim.—First, making the shoe adjustable on the diamond-holding bar, substantially as and for the purposes described.

Second, the furrow *k* on the shoe, substantially as and for the purpose set forth.

Third, the gauge *g*, in combination with the pin or pins *h* projecting from the bar *b*, substantially as and for the purpose described.

No. 47,646.—THOMAS W. KNOX, New York, N. Y.—*Conductor's Check-box.*—May 9, 1865.—This invention consists of a box to receive checks issued to passengers by officers and conductors on railroad cars and other conveyances, and which is so arranged that its contents cannot be removed without exposure.

Claim.—First, a conductor's check box, whose top E is perforated, as shown at *f*, to receive passengers' tickets, whose bottom *f* is hinged, so as to be capable of being opened; both the top E and bottom F being inclosed respectively by outer covers B B′, substantially as above described.

Second, the springs *a a* on either side of the slot or perforation *f*, in combination with the partition D of the cover B, substantially as and for the purpose above described.

No. 47,647.—ADOLPH KOEHLER, Holyoke, Mass.—*Harness Saddle-tree.*—May 9, 1865.—This invention consists in securing the check-rein hook between the seat and the tree by means of a lug or projection passing through the leather at the upper surface of the tree, combined with a screw, flush with the under surface of the tree, and in the combination with the latter screw of another screw passing through a lip placed at the rear of the tree and into a pendant projection, for the purpose of securing the rear part of the tree.

Claim.—Securing the check-rein hook G between the seat C and tree A by means of the lug or projection *a*, combined with the screw E, as described.

Also, in combination with the screw E, the screw D passing through the lip *b* and into the pendant projection *c*, for the purpose of securing the rear part of the seat to the tree, as described.

No. 47,648.—T. S. LA FRANCE, Elmira, N. Y.—*Governor.*—May 9, 1865.—This invention consists in the use of the semicircular springs hinged at the top of the governor spindle, in combination with three belts, two of which are fastened to the central portion of the springs in such a way that they can be adjusted nearer to or further from the centre of motion; the third one is connected to the lower ends of both springs and also to the end which passes up through the centre of the spindle and which rises and falls with the ball or weight. Any increase of speed above what is proper causes the centrifugal force of the ball connected to the central portion of the springs to carry out that portion of them, and this causes the lower ball to rise and with it the rod to which the governor valve is attached, and the valve is closed to the requisite extent, and upon any diminution of the speed the ball or weight is in turn brought into requsition, and by its weight and the force of the springs combined the valve is opened.

Claim.—First, the hinge joints *c*, in combination with the springs E E, spindle C, balls G G, and weight F, constructed and operating substantially as and for the purpose described.

Second, the screw studs *g*, or their equivalents, in combination with the balls G G and springs E E, substantially as described, so that the distance of the balls from the centre of rotation can be regulated at pleasure.

Third, the combination of the springs E E, balls G G, weight F, and rod *f*, all constructed and operating substantially as and for the purpose set forth.

No. 47,649.—WM. E. LANE, Peekskill, N. Y.—*Kingsbury's Coal Stove.*—May 9, 1865.—This invention consists in applying to the stove, known as Kingsbury's, and patented April 12, 1859, a semi-jacket, with tubes leading from the sides up through the products of com-

bustion to the top of the heater, the semi-jacket extending to a point above the holes leading into the said tubes.

Claim.—The combination of the semi-jacket C′ with the empire heater of G. J. Kingsbury, for the purpose and in the manner substantially as set forth.

No. 47,650.—Edwin A. Leland, New York, N. Y.—*Gas Cooking Stove.*—May 9, 1865; antedated April 26, 1865.—This invention consists of a square stove of tin or sheet iron, having openings in the top for cooking utensils. Beneath every opening is a gas burner, which brings the flame in direct contact with the bottom of every cooking utensil. In the middle of the stove is a baking chamber, surrounded on every side by flues for the passage of the heat, which is generated by a gas burner beneath said chamber. All these burners are supplied by a series of conducting tubes, and can be used either separately or in conjunction.

Claim.—First, the employment in a gas cooking stove of one or more burners, arranged directly undr the oven, in combination with flues below, at the sides, and on the top of the oven, substantially as herein specified.

Second, in combination with the burners under the oven, and the flues under and at the sides thereof, the setting-in of the upper part of the oven, substantially as shown at *d e*, in Fig. 2, whereby the heat is enabled to be radiated downward on to the contents of the lower part of the oven, as herein set forth.

Third, the employment of a system of burners so applied in the lower and upper parts of a gas cooking stove containing an oven that the products of combustion from the lower burner or burners pass through the upper burner or burners, and the latter is or are supplied with air through the former, substantially as herein specified.

Fourth, the arrangement of the upper burners and the partition *h* in relation to each other and to the set-in upper partitions *d e* of the sides of the oven, substantially as herein described, whereby the products of combustion from the lower burner are caused to pass over the horizontal parts *d* of the set-in portions, and so to produce a downward radiation of heat on the contents of the lower part of the oven, as herein set forth.

No. 47,651.—H. W. Libbey, Cleveland, Ohio.—*Explosive Shell.*—May 9, 1865.—This shell contains two longitudinal chambers concentric with each other, the interior one being contracted at its middle, somewhat after the form of an hour-glass.

Claim.—The shell A, having two chambers B and C when the side walls of the latter spring from the further and outer extremities of the former, forming a double cone-shaped chamber, constructed at the centre.

No. 47,652.—George Marshall, New York, N. Y.—*Pump.*—May 9, 1865.—The novelty of this invention consists in the combination of parts recited in the claim.

Claim.—The combination of a perforated hollow piston C, tubular piston rod D, centrally perforated disk valve F, and a pump cylinder which is constructed with a chamber B beneath it, and a valve *c* leading into it beneath the piston, substantially as described.

No. 47,653.—B. Marsteller, Wolf Creek, Penn.—*Liniment.*—May 9, 1865.—This invention consists of a mixture of alcohol, tincture of wild indigo, American ipecacuanha, inner bark of white elder, opium, oil of sassafras, oil of hemlock, red cedar, spirits of turpentine, capsicum, and gum camphor.

Claim.—The within described composition for a liniment, made in the manner set forth.

No. 47,654.—Robert McGrath, Philadelphia, Penn.—*Fluid Ejector.*—May 9, 1865.—This invention consists in the employment of an air condenser placed above the ground and outside an oil well. To the condenser is attached a pipe extending down the well tubing. To the end of this pipe is attached a perforated circular pipe, which permits the escape of a sufficient quantity of condensed air to force the oil to the surface of the earth.

Claim.—The reservoir for compressed air and its connecting pipe, with stop-cock attached, and the ring pierced in form, as described, at the bottom of the well.

No. 47,655.—Joseph Mills, Reading, Ill.—*Cultivator.*—May 9, 1865.—In this machine long jointed tooth standards are connected with a front bar by rods, and double up free from the ground by turning the axle. The distance between the two inner ploughs is varied by double screw rods and nuts.

Claim.—First the vertically adjustable and jointed posts D D, and the vertically adjustable, jointed, and swinging posts E E, in combination with the rods K, for the purpose of guiding and adjusting the shovels, substantially as described.

Second, the rotating axle B in combination with the jointed posts D D E E, substantially as described.

Third, the double screw rod F and swingiug nuts G in combination with the swinging posts E E, substantially as described.

Fourth, the standard M in combination with the posts D D E E and the axle upon which they are mounted, substantially as described and for the purpose set forth.

No. 47,656.—Joseph W. Norcross, Middletown, Conn.—*Casting Tackle Blocks.*—May 9, 1865.—This invention consists in a device for forming the mould in which the different parts of the tackle block, as the hook and ring thereof, with the block, can be cut at once, or the ring cut in or through the eye of a hook which has been previously cut.

An intelligible description would exceed the limits of a brief, and require besides a reference to the drawings.

Claim.—The within-described apparatus for forming the mould for casting the eyes of a tackle block, and the eye of a hook, or any other two eyes or rings together, or any equivalent means, constructed and operating substantially as herein set forth.

No. 47,657.—N. P. Otis, Yonkers, N. Y.—*Canal Propeller.*—May 9, 1865.—This invention consists in the application to a canal boat of one or two wheels mounted on the end or ends of a shaft, which has its bearings in rising and falling slides moving in segmental guideways, and to which a rotary motion is imparted by an engine in the interior of the boat, in combination with a track extending on the side of the canal throughout its entire length, in such a manner that by the action of said wheel or wheels on the track the boat can be propelled with comparatively little power, and without any external power such as usually employed.

Claim.—First, the combination of the rack J, wheel I, pulleys C E, and chains D, operating substantially as and for the purposes set forth.

Second, in combination with the above, mounting the shaft which carries the driving wheel or wheels in slides moving in segmental guideways, substantially as and for the purpose described.

Third, the flanged guide wheel K in combination with the rising and falling slide *b*, rack J, and boat A, constructed and operating substantially as and for the purpose specified.

No. 47,658.—Levi N. Parks, Winchendon, Mass.—*Mode of Fastening the Heads to Spools.*—May 9, 1865.—This mode of securing the head is designed not only to facilitate the removal of a broken one and the substitution of a new one, but by reason of a flange on a metallic cap a larger surface is obtained for attaching the head, and hence it can be secured more firmly, with less liability to be broken.

Claim.—The combination and arrangement of the metallic cap A with the body B, the head C, and the gudgeon E of the spool, the said cap being fastened to the head, and to the gudgeon, and to the body, by means substantially as described.

Also, in combination with the body B, head C, metallic cap A, and gudgeon E, applied together as specified, the metallic disk D, arranged on the external surface of the head, and so as to receive the gudgeon, as specified.

No. 47,659.—C. M. and G. Richards, Harpersville, N. Y.—*Animal Power.*—May 9, 1865.—This invention relates to that class of animal powers in which an inclined tread is used, and has for its object simplicity of construction and a ready adjustment of the treadwheel as circumstances may require.

Claim.—The frame J hung upon one or more journals and provided with arms *d e*, which constitute bearings for the shaft I of the treadwheel H, to admit the adjustment of the latter, in the manner herein described.

Second, in combination with the suspended frame J *d e*, the bar or lever C provided with friction rollers *f f*, and attached to the frame J when used in connection with a treadwheel H, for the purpose specified.

Also, the mode of constructing the framing of the machine, to wit, of two metallic sides connected by wooden reaches, braced by a transverse metal bar E, which serve as an inner bearing for the shaft D, from which the power is taken, substantially as set forth.

No. 47,660.—T. C. Richards, New York, N. Y.—*Cigarette.*—May 9, 1865.—This invention consists in making the tip or mouth-piece of a cigarette of bamboo or ratan.

Claim.—Manufacturing the mouth-pieces of cigarettes of ratan or bamboo, in the manner and for the purposes described.

No. 47,661.—Samuel S. Ritter, Philadelphia, Penn.—*Stud and Button.*—May 9, 1865.—This invention relates to a stud the two disks of which are capable of being detached and connected, so that in putting it into the bosom or sleeve it will only be necessary to insert the stem or shank through the button-hole, and then apply the detached disk to the opposite side.

Claim.—Providing a stud and button with a spring or springs *a* and a notch or notches *b*, permitting the two disks A A to be coupled and uncoupled at will, substantially as and for the purpose explained.

No. 47,662.—E. P. Russell, Manlius, N. Y.—*Horse Power.*—May 9, 1865.—This invention consists in the peculiar arrangement of the parts, and will be understood by reference to the claim and engraving.

Claim.—The combination and arrangement of the driving wheel B with the conical rollers C and the taper screw D, when constructed, arranged, and operating in the manner described and for the purpose of forming a horse power.

No. 47,663.—Thomas Shaw, Philadelphia, Penn.—*Spring.*—May 9, 1865.—This invention consists in punching in the lower side of the plate slots or grooves, and at the same time forming upon the opposite side nibs or projections by means of a die. When the plates are put together to form the spring, the nibs fit into the grooves, so as to prevent any latteral movements in the plates, and the grooves are made long enough to permit the spring to work up and down freely.

Claim.—Forming the nib under the groove in the manner set forth, for the purpose specified.

No. 47,664.—P. B. Sheldon, Prattsburg, N. Y.—*Flower Stand.*—May 9, 1865.—This invention consists in the employment of one or more sets of radial arms, secured on a vertical standard or shaft, so arranged as to turn horizontally, and to be adjusted up and down to adapt the arms to any position of the flower stand, while at the same time, when thus adjusted, the arms shall be retained in proper position against accidental turning by means of corrugations upon the surface of the plates from which the arms radiate.

Claim.—Providing the bearers *b b b* of the arms and their support D with radial flutes and corrugations, or their equivalent, for the purpose of retaining the arms in place at any adjustment thereof, and also allowing them to turn when necessary action is applied, substantially as herein specified.

No. 47,665.—J. N. Stanley, Brooklyn, N. Y.—*Kiln for Burning Brick and Pottery Ware.*—May 9, 1865.—This invention consists in a flue or flues placed centrally within the chambers, so arranged that the products of combustion from the furnaces placed around the lower parts of the kiln pass directly through the burning chamber, and then descend through the central flue, and through the same to the smoke-stack. A horizontal flue extends to the smoke-stack, and is made to communicate with one or more central flues.

Claim.—The employment in a kiln for burning brick, pottery ware, and like articles of a flue or flues, placed centrally or thereabouts within the burning chamber of the kiln, and arranged in such a manner that the products of combustion from the furnaces, which are placed around the lower part of the kiln, will pass directly upward through the mass of bricks, pottery ware, or other articles placed in said burning chamber, and thence descend through the central flue or flues down to a horizontal flue, and through the same to the smoke-stack.

Also, a horizontal flue E extending to the smoke-stack, when said flue is used and made to communicate with one or more vertical or central flue or flues in a kiln for the purpose of utilizing the heat which passes from said flues.

No. 47,666.—Michael Joseph Stein, New York, N. Y.—*Sewing Machine.*—May 9, 1865.—This machine is designed for sewing the soles upon boots and shoes, where the same are turned inside out for the purpose. The platform which supports the sewing mechanism is centred on the driving shaft, and may be raised or lowered by a rack to bring the operative mechanism into proper position relatively to the channel in the shoe where the line of stitching is to be made, the rest passing into this channel and returning the shoe in position. The table supporting the work is also adjustable vertically. A motion is given to the needle in entering and passing through the cloth similar to that in hand-sewing.

Claim.—First, mounting the sewing mechanism upon a platform or frame which oscillates upon the driving shaft, substantially as herein set forth.

Second, the rest R applied in combination with the sewing mechanism, supported by the hinged platform G, substantially as and for the purpose set forth.

Third, giving to the needle, in addition to its usual motion for penetrating and withdrawing from the material, a slight falling and rising motion, by means substantially as herein described, or any other equivalent means, so as to depress its point while entering the material to be sewed, and raise the same when passing out of said material, for the purpose set forth.

Fourth, the hinged adjustable gauge H, applied in combination with the rest R and needle *n*, substantially in the manner and for the purpose set forth.

Fifth, the last supporter I, with a series of sockets *l*, in combination with a sewing mechanism, constructed and operating substantially as and for the purpose set forth.

Sixth, the vertically-adjustable table E, in combination with the last supporter L, and with the sewing mechanism secured to a hinged platform G, substantially as and for the purpose described.

Seventh, the combination of the hinged oscillating thread guide *t*, looper *l*, and needle *n*, constructed and operating substantially as and for the purpose set forth.

No. 47,667.—J. M. Stone, North Andover, Mass.—*Drawing Frame Rolls.*—May 9, 1865.—To avoid the expense incident to the wearing away of the bearing ends of the shafts of such rolls as have an endwise as well as a revolving motion, (like those in Chase and Stone's patent of March 29, 1864,) the shafts are made in sections, and either projecting, end piece, or section can be removed and a new one substituted. These end-pieces are secured to a flange which is screwed to the head of the rolls; each head having a central shaft hole into which the inner end of these pieces sink, so that all parts of the shaft are in line. The rolls are made of tin, are hollow and braced at intervals by interior heads.

Claim.—The improvement in the construction of drawing frame and other similar rolls, substantially as specified.

No. 47,668.—Daniel Tainter, Worcester, Mass.—*Carding Machines.*—May 9, 1865.—By this arrangement the leading-in cylinder can be removed for the purpose of being cleaned, ground, or repaired without the necessity of first removing the burr cylinder and its guard, and working cylinders can be used against the main cylinder, under the leading-in cylinder, with but little inconvenience or delay to the operator in putting in or removing the same.

Claim.—First, the combination with the main frame of a machine for carding wool and cotton of a supplemental sliding frame for supporting the feed-rolls, burr, and leading-in cylinder, and operated by rack and pinion, as and for the purposes set forth.

Second, the combination with the sliding frame H of the racks *b*, pinions L, and crank shaft *d* for sliding in and out the frame H, substantially in the manner herein described.

No. 47,669.—J. L. Tarbox, New Orleans, La.—*Illuminated Sign.*—May 9, 1865.—This invention consists of a grooved frame to receive a glass plate covered by metal stensils, held in place by a confining strip between the lines of letters.

Claim.—The changable illuminated sign herein described, consisting of a grooved or rebated frame B, glass plates D, movable letter plates C, and confining strip *d**, all constructed and employed as and for the purpose specified.

No. 47,670.—Joseph S. Todd, Macon City, Mo.—*Air-tight Coal Stove.*—May 9, 1865.—This invention consists of an annular metallic plate fitting closely between a basket grate and the cylinder of the stove, at a point about half way up the side of the grate; just below the plate is an aperture in the stove to admit air into the fire chamber.

Claim.—The combination of an air-tight sheet-iron stove, with the basket-shaped grate and the horizontal cast-iron annular plate *g*, as and for the purposes set forth.

No. 47,671.—E. J. Toof, Fort Madison, Iowa.—*Hay Elevator.*—May 9, 1865.—This invention relates to a device for elevating articles, and is more especially designed for stacking hay and grain. It consists in the use of a single pivoted beam and a single rope applied to a framing, all arranged so that the mass to be raised will be elevated and deposited in the proper place by a single movement of the beam.

Claim.—First, the pivoted beam or pole C, provided with a rope D, in connection with and inclined guide bar E, all being applied to a suitable framing A, and arranged to operate in the manner substantially as and for the purpose set forth.

Second, the adjustable plate or stop F on the rope D when used in connection with the pivoted beam or pole C and enclosed bar E, for the purpose specified.

Third, the short inclined plane or notch *f* at the under side of the inclined bar E, for the purpose specified.

No. 47,672.—Isaac N. Voris, Pescadora, Cal.—*Shingle Machine.*—May 9, 1865.—In this machine the saw revolves on a shaft journalled in a stationary frame, and the block is clamped in a swinging frame, which is advanced to the saw by a rack bar operated by a pinion from the saw driving mechanism. The block is clamped in its frame by an eccentric roller, and fed after each stroke by means of a cord which operates a rock shaft, pawls, and ratchet wheels, the latter being on the shafts which carry the fluted clamping rollers.

Claim.—First, the swinging frame D, provided with the clamp rollers H F, arranged as shown and operated, through the medium of the rack *h*, on bar R, the pinion C, levers S T, and the grooves *i i* in bar R, substantially as and for the purpose set forth.

Second, the eccentric roller J in combination with the spring I, sliding bar G*, lever K, and fluted rollers H F, for clamping or holding the bolt, as set forth.

No. 47,673.—James Wensley, New Brunswick, N. J.—*Means for Carrying and Operating the Shuttle in Sewing Machines.*—May 9, 1865.—The shuttle has a grooved tongue the whole length of the face, which supports it in a fixed dovetailed groove in which it travels. A reciprocating slide carries a rocking lever, having pins at each end, one of which is always inserted in a hole in the shuttle; this lever is rocked to operate the pins by means of a third pin thereon, playing in an inclined groove.

Claim.—The combination of the slide H, pivoted traveller I, pins *d e f*, slot M, horizontal groove 1 and 3, and inclined groove 2, employed in connection with the shuttle B, supported and guided by the tongue *o*, all the said parts being constructed and arranged to operate as herein specified.

No. 47,674.—George Wright, Washington, D. C.—*Linchpin.*—May 9, 1865.—This invention consists in providing a safety linchpin, so as to render it almost an impossibility to be displaced from its position in the axle accidentally, at the same time allowing it to be readily removed or put in place by hand.

Claim.—First, the safety or embracing arm D.

Second, the arm D in combination with the pin A, constructed and operated substantially as described, for the purpose set forth.

No. 47,675.—JOHN ZIMMERMAN, Royalton, N. Y.—*Cooking Apparatus.*—May 9, 1865.—This apparatus may be made of tin or sheet metal, and consists of a central chamber encircled by a perforated plate, and having a perforated bottom, through which steam is admitted to the viands placed in the chamber, the whole being surmounted by a lid and surrounded by an exterior casing; it is intended to be placed over a vessel of hot water which rests in a hole in a stove. Various cooking utensils are provided, by means of which all ordinary culinary operations may be performed.

Claim.—First, the combination of the inner perforated receptacle with the exterior shell or casing and the boiler, substantially as described.

Second, the general arrangement of the containing vessel, consisting of the perforated receptacle and its outer casing and the cooking utensils, as described and represented, adapted for special and characteristic purposes therein.

No. 47,676.—GEORGE W. BENTLEY, assignor to himself and CHARLES G. HINE, New York, N. Y.—*Manufacturing of Blacking Boxes.*—May 9, 1865.—The box is constructed by first making the rings, which constitute the body or side of the box, of a plain strip of sheet-metal of the proper width, and turning inwards, one edge of each at right angles to the body of the ring, and forming a flange, against which the disks, which constitute the bottom and top of the box, and which are inserted from the inside, rest; a groove is then sunk in each ring close to the disk, of sufficient depth to bind against it firmly and hold it in place.

Claim.—First, the manufacturing of boxes or cases formed of tin or sheet metal, with heads of wood or other suitable material, turning in at a right angle all round a portion of the metal to form a seat or shoulder for the end of wood, or other suitable material, inserted within the metal after said seat or shoulder has been formed.

Second, inserting the heads of wood, or other suitable material, within the strips of metal previously soldered and provided with the seats, as shown, and creasing the metal for the purposes described.

No. 47,677.—JOHN S. BICKFORD, Tuckingmill, Great Britain, assignor to JOSEPH TOY, Simsbury, Conn.—*Fuse for Blasting.*—May 9, 1865.—This invention consists of a fuse, prepared in the following manner: A strand of cotton is steeped for a few minutes in nitric acid, and washed and dried. It is then steeped in a mixture of equal parts of nitric and sulphuric acids, the nitric acid having a specific gravity of 1.14; it is then washed, dried, and soaked for a short time in silicate of potash, and again dried, after which it is prepared in the same manner as the ordinary fuse.

Claim.—The employment in a fuse, as a substitute for gunpowder, of a central strand or core of gun-cotton, substantially as and for the purpose herein described.

No. 47,678.—HENRY L. BUCKWATER, Kimberton, Penn., assignor to himself, T. A. BUCKWATER, Kimberton, Penn., and E. PRICE, Phœnixville, Penn.—*Washing Machine.*—May 9, 1865.—This invention is fully set out in the claims.

Claim.—First, the convex roller bed B, in connection with a reciprocating roller C, composed of grooved slats, arranged as shown, and controlled or guided in its movement by the slightly curved guides E E, substantially as and for the purpose specified.

Second, the swivel heads or guide rollers D, constructed and applied to the rubber, and fitted on the guides E E, substantially as and for the purpose set forth.

Third, the combination of the convex roller bed B, reciprocating rubber C, guides E E, and swivel heads or guide rollers D, all arranged to operate substantially as and for the purpose specified.

Fourth, the combination of the grooved bottom plate B′ and grooved rollers B with a reciprocating rubber, all being constructed and arranged to operate as herein set forth.

No. 47,679.—EDWARD DUNSCOMB, assignor to WILLIAM F. PERKINS and L. L. FULLER, Boston, Mass.—*Apparatus for Carburetting Air.*—May 9, 1865.—This invention consists of an air holder working in an annular space within a proper vessel. Within this vessel is also a cylinder, provided with a series of perforated cones and perforated diaphragms. The air from the air holder is forced down through a tube and rises up within the cylinder, passing through the perforated cones and diaphragms. In this cylinder it is charged with hydro-carbon vapor, and escapes through the tube to be burned. The hydro-carbon liquid is supplied through a pipe.

Claim.—First, the employment of the two air-forcing bells, filling alternately and automatically, thus supplying a constant air-blast, as hereinbefore set forth.

Second, the arrangement and application of the cones and inverted cones *a a′ a*2, &c., placed base to base and apex to apex, with the lines of perforations *b b′* (Figs. 6 and 7) alternating from centre to circumference, essentially in manner and to operate as before explained.

Third, the application of the air tube E in the generator to conduct the air through the top of the generator to the recess T at the bottom, to operate as before described.

Fourth, the recess T at the bottom of the generator, making an air cushion, as before described.

Fifth, taking the gas from the top of the generator through the air-bell C by means of an air-tight joint made by the annular cup O and the inverted thimble P, (Fig. 5,) substantially as hereinbefore described.

No. 47,680.—HIRAM W. HAYDEN, Waterbury, Conn., assignor to HOLMES, BOOTH & HAYDEN.—*Lamp.*—May 9, 1865.—This invention consists in corrugating the wick tube in its interior surface.

Claim.—Making the wick tube corrugated or fluted with channels in its interior surface, substantially as and so as to operate as specified.

No. 47,681.—EDWARD M. LANG, Westbrook, Me., and ISAIAH GILMAN, Portland, Me., assignors to themselves, JOSEPH L. WINSLOW, and E. HERSEY.—*Lamp.*—May 9, 1865.—This invention consists in the combination of an inner and outer cone with slots, one being wider and the other narrower at the apex than at their ends respectively, supported by conductors of various sizes and forms, and surrounded by a removable jacket.

Claim.—The above-described combination, as well as the arrangement of the wick tube E, the two cones A B, the metallic annular conduit C, the conductors D D, and the supports D″ D″, or the equivalent of the latter.

Also, the combination of the removable jacket F with the two cones A B, the ring C, and the wick tube, arranged and connected substantially as specified.

Also, the contraction of the mouth of the inner cone at its middle, or its expansion in opposite directions therefrom, in combination with the expansion of the mouth of the outer cone at its middle, or its diminution in opposite directions therefrom, in manner substantially as represented and hereinbefore described.

No. 47,682.—EDWARD MURRAY, New York, N. Y., assignor to FREDERICK WUESTHOFF, Newark, N. J.—*Skate.*—May 9, 1865.—This invention consists in a movable runner combined with a link and adjustable heel screw, and with a sliding cam plate, which operate clamps acting upon the sides of the boot sole to secure the same.

Claim.—The combination of the movable runner *c*, link *h*, and heel screw *k*, with the sliding plate *e* and clamps *f f*, taking the sides of the sole of the boot, as specified.

No. 47,683.—S. P. OCHILTREE and E. C. JOHNSON, assignor to S. P. OCHILTREE, W. S. WEIR, N. P. BAYMOUNT, Monmouth, Ill.—*Saw-filing Machine.*—May 9, 1865.—This invention is too complicated to allow an intelligible description to be given within the limits of a brief, and without referring to the drawing.

Claim.—First, the shaft M, provided with one or more toothed plates N N′ N″, and attached to the under side of the slide L, to which the saw clamps are secured, in connection with the pawl or arm E′ and lever D′, the latter being operated by the cam C, or its equivalent, for the purpose of feeding the saw underneath the file, as set forth.

Second, providing the lever D with an adjustable fulcrum *r*, and having the pawl or arm E′ slotted longitudinally, with a set screw F′ at its rear for the purpose of regulating the movement of the pawl or arm to suit the size of the teeth of the plates of shaft M, as described.

Third, the lever A′, operated substantially as shown, with spring B′ applied to it, and connected with the rod Y, having the plate X attached for the purpose of raising the file during the backward movement of the same, and a spring keeping the file pressed down during its forward movement, as set forth.

No. 47,684.—JOHN STEELE, Buffalo, N. Y., assignor to LAWREN C. WOODRUFF, CORYDON KARR, and himself.—*Mode of Pressing Damp Clay.*—May 9, 1865.—This invention consists in forming cells or perforations in the wet clay by means of spurs or pins, to be retained until sufficient pressure has been employed to render the clay self-sustaining in form, but withdrawn before the final pressure is applied; to leave apertures, into which the air and moisture escape from the clay; and in the method of applying the pressure to the clay equally upon both sides by means of platens.

Claim.—The mode herein described of pressing damp clay or other plastic material, to admit of the escape of the air and moisture therefrom before the final pressure is imparted, substantially as and for the purposes described.

Also, the method of pressing the clay for bricks, tiles, and other purposes, by applying the pressure simultaneously from two opposite directions, by means substantially as shown and for the purposes described.

Also, ventilating the mould by means of the perforations *m m* in one of the parts thereof, which is exposed while being filled, but removed before the pressure is applied, substantially as set forth.

No. 47,685.—DAVID B. TETER, Batavia Station, Iowa, assignor to himself and SAMUEL C. DICKINSON, Van Buren county, Iowa.—*Mode of Adjusting Bands on Hand Spinning Machines.*—May 9, 1865.—The pulleys at the end of the track, and over which pass the bands, are free to be turned in the arc of a circle, and are secured in the desired position by a nut; the band passing over one of the pulleys is not endless, but is severed, and its two ends are secured by pins to the periphery of the pulley, and pass around it in opposite directions, thus avoiding any liability to slip.

Claim.—The method of adjusting bands in spinning machines by means of screws and nuts, in combination with the manner of attaching the band to the pulley T, as and for the purposes described.

No. 47,686.—JOHN E. TRAVIS, assignor to himself and ELON FRANCISCO, Greenville, Ill.—*Gang Plough.*—May 9, 1865.—This invention consists in a combination of the plough frames and their ploughs with a fixed frame by means of a fulcrum pin or fixed joint. Also, in an arrangement of levers and connecting links and bolts for raising the plough frames.

Claim.—The combination of the plough frame B and its attached ploughs with the fixed frame A, by means of a fulcrum piece X, or other similar hinged joint, substantially in the manner and for the purpose herein set forth.

Also, the employment of the levers *t* and *t'*, with their fulcrums *l* and *l'*, and their connecting links *e* and *e'*, and their bolt *f* and *f'*, when combined with the frame B, substantially as and for the purposes set forth.

No. 47,687.—WILLIAM TUNSTILL, assignor to THEODORE H. CONKLING, New York, N. Y.—*Loom.*—May 9, 1865.—By the rocking motion of the frame, the strain exerted on the warp threads by the operation of producing the web is materially reduced. The selvage warp threads have an up and down motion independent of the motion of the harness. The stop motion devices are actuated by the giving out or breaking of the weft thread at either end of the shuttle race.

Claim.—First, the combination of the shaft *k*, worms *g h*, wheels *i j*, rollers *a a' d d'*, rocking frame *b*, arm *b2*, and cam *b'*, when constructed and arranged to operate as herein specified.

Second, the belts *l2 l3* and drums *l'* in combination with the crank *l5* and the heddle cords *l4*, constructed and operating substantially as and for the purpose set forth.

Third, the devices above described for effecting the stop motion, arranged substantially as and for the purpose specified.

No. 47,688.—ETHAN ALLEN, Worcester Mass.—*Metallic Cartridge.*—May 16, 1865.—The base of the cartridge has a central aperture with an interior annular flange, forming a short tube, which is designed to receive a percussion cap provided with a flanged or enlarged base to support it when inserted into the opening at the rear of the said cartridge.

Claim.—First, making the base of the cartridge shell with an opening and a flange *b*, in combination with grooving out the base B, whereby the body of the cap, as well as the flange which contains the fulminating powder, are well supported, and a sure explosion insured, substantially as described.

Second, the combination with the case A of a base B, provided with three flanges *a b* and *c*.

No. 47,689.—GEORGE ANDERSON, Salem, Oregon.—*Making Sheet-metal Boxes.*—May 16, 1865.—This device consists of five leaves hinged side by side, the middle one constituting the bed or bottom, the two adjoining ones on either side, and the outer ones of half the size being intended to clamp and bend the sides and top of the box. To one end of the middle leaf is hinged a block or mould, the four sides of which correspond in shape and size to the leaves by which it is to be surrounded. In operation the mould is held upward nearly vertically by a spring until the sheet to be bent is adjusted on the leaves, when it is brought down and secured by a spring latch. The hinged leaves are then, by means of arms attached thereto, and a treadle, brought up against the sides of the mould and the outer half leaves pressed over the top thereof, and the bending of the sheet completed.

Claim.—First, the mould A in combination with the form C, the latter being composed of the plates *a f f g g*, connected by hinges *e h*, and the mould being attached to the plate *a* of C by a hinge B, all arranged substantially as and for the purpose set forth.

Second, the spring D in the described combination, with the hinged block A, for raising the same automatically, as explained.

Third, the arms *k k*, in the described combination, with the hinged plates F F, for the purpose specified.

No. 47,690.—JONATHAN BAILEY, East Troy, Wis.—*Snap Hook.*—May 16, 1865.—This invention consists in constructing a snap hook with a sliding bolt working through projections thereon, and kept in a closed position by a spiral spring coiled around the same so as to prevent its accidental detachment.

Claim.—The combination of the sliding bolt with the snap hook and spiral spring coiled around the bolt as described, for the purposes set forth.

No. 47,691.—STEPHEN S. BARTLETT, Providencee, R. I.—*Harvester.*—May 16, 1865.—This invention relates to the arrangement of means for regulating the pressure of the inner shoe or heel end of the cutting apparatus on the ground, and will be understood from the claim.

Claim.—The combination, with the shoe D, of the pivoted spring brace E, fixed spring brace G, lever H, and rack *f*, all arranged in relation to the main frame, as and for the purposes described.

No. 47,692.—STEPHEN S. BARTLETT, Providence, R. I.—*Mowing Machine.*—May 16, 1865.—This invention will be understood from the claim and engraving.

Claim.—The use of the socket *f*, cast with the pole plate, in combination with the adjustable standard K, for supporting and adjusting the seat, substantially as herein described.

No. 47,693.—William E. Bates, Elmore, Ill.—*Cultivator.*—May 16, 1865.—In this invention swinging levers, to be operated by the foot, are so connected with the forward and rear shovel standards, and so pivoted to the laterally-moving mechanism that one movement of the foot adjusts in the same line both shovels.

Claim.—The swinging levers Q Q connected substantially as described, with the forward and rear shovel standards, which are pivoted in such relation to the frame and laterally-moving mechanism that the two shovels thus connected are caused, by the action of the treadle, to approach to or recede from the corn in concert, as described and represented.

No. 47,694.—J. Lowden Beadle, Ashland, Pa.—*Ventilation of Mines.*—May 16, 1865.—In this invention the circulation through the downcast shaft and air passages in the mine is caused by a fan blower in the upcast shaft. Alongside the breasts are temporary air courses, constructed as the work progresses, of plank and timber, through which the air circulates about the points where the miners are at work, and thence to the upcast shaft. These air courses are broader at base than at top, and are sufficiently large to allow the miners to pass through in going to or returning from their work.

Claim.—The use of the fan as an exhauster of the impurities of mines, or for the purpose of creating a partial vacuum in the working parts thereof, in combination with the system of air courses herein represented and described.

No. 47,695.—August Bickel, Philadelphia, Penn.—*Crutch.*—May 16, 1865.—This invention consists in the use of a cup made of vulcanized India-rubber, which is screwed over the point of the crutch when it is used indoors; also, in the use of a perforated thimble, which, when the point is not covered, is screwed over its screw thread and thus protects it from injury.

Claim.—The employment of a removable buffer D, in combination with the spur B, fixed rigidly in the lower part of the crutch staff A as described, the said buffer being constructed so as to be applicable over the spur, in the manner described and for the purpose specified.

Also, the employment of the removable guard thimble C, in combination with the spur socket E on the lower end of the crutch staff A, as described, the same being constructed so as to be applicable in the manner and for the purpose set forth.

No. 47,696.—Lyman R. Blake, Boston, Mass.—*Constructing Boots and Shoes.*—May 16, 1865.—In shoes not made as "turns," it has been necessary to use an inner sole upon the bottom of the last, to which sole the vamp is "lasted" or temporarily secured. It has been the practice to make such inner soles nearly of the size of the outer sole, so that the fastenings by which the outer sole and vamp are secured together have passed through the inner sole also. To make a shoe without "turning" it, and so that the inner sole can be removed if desired, (it being of the nature of a filling and not an integral part of the structure,) is the object of the invention, which consists in the employment in "lasting" the vamp of an inner sole made so narrow that the permanent fastenings of the outer sole will not enter the inner sole, which is, however, made wide enough to receive the fastenings used to "last" the vamp.

Claim.—The new process of constructing a shoe, substantially as set forth.

No. 47,697.—M. Bonney, Mantua, Ohio.—*Machine for Measuring and Counting Shingles.*—May 16, 1865.—The object of this invention is to measure and estimate the number of shingles by machinery, and it consists of a reciprocating lever to which is attached suitable fingers, that take hold of and force under a wheel that revolves by passing the shingles under it that are to be counted, all secured to a proper frame. To the shaft of this wheel is attached a worm wheel which operates a pinion or index wheel so that, when shingles shall have passed under the periphing of the large wheel to cause the index wheel to make one revolution, they will count a thousand.

Claim.—The measuring wheel F and recording index I K, in combination with the slide G, hooks *m* and *c c*, dog *g*, and adjustable arms D D, arranged and operating as and for the purpose set forth.

No. 47,698.—Edward Bucklin, Jr., Pawtucket, R. I.—*Clothes Dryer.*—May 16, 1865.—This invention consists in a rod fitting into a socket in a stationary post and arranged to slide in a socket without being allowed to turn, in combination with radiating arms extending from a sleeve which swivels on the upper end of the said longitudinally sliding central rod, and with braces hinged at one end to the arms.

Claim.—The longitudinally sliding rod E forming the guide for the revolving sleeve or swivel D, in combination with folding arms C, hinged braces *b*, ring B, and post A, constructed and operating substantially as and for the purpose set forth.

No. 47,699.—James Brewer, Albany, N. Y.—*Cultivator.*—May 16, 1865.—In this invention the central pair of plough standards are secured by swivel hinges and have adjustable stirrups for the feet and for the knee, to aid in adjusting the ploughs.

Claim.—First, securing the central pair of cultivator standards to the plough beams by

means of swivel hinges for the purpose of admitting them to be moved in a vertical as well as in a lateral direction, substantially as and for the purpose specified.

Second, in combination with the laterally movable standards O, adjustable stirrups *r*, substantially as and for the purpose specified.

Third, in combination with the laterally movable standards O, the extension pieces *p* and knee stirrups *s*, for the purpose of enabling the ploughman to operate the ploughs by hand or foot, substantially as and for the purpose specified.

No. 47,700.—FERDINAND E. CANDA, Chicago, Ill.—*Railroad Car Brake.*—May 16, 1865.—This invention consists in applying an eccentric or cam wheel to the lower end of the windlass, by which the car brakes are operated; also in providing such eccentric or cam wheel with a band for distributing the pressure and in combining this device with other parts of a car brake.

Claim.—First, the belt *a* when used for distributing the pressure on the wheel *b*.

Second, the combination of the eccentric wheel or cam *b* and the belt *a* with the connecting rod or chain *c*.

Third, the arrangement of the shaft *m*, eccentric wheel or cam *b*, belt *a*, and the ratchet and pall *i* and *h*, all being arranged and operating substantially as set forth and specified.

No. 47,701.—JOSEPH CASEY, Washington, D. C.—*Device for Heating and Conveying Petroleum.*—May 16, 1865.—This invention consists in providing a pipe of suitable diameter for conveying the oil from any number of wells. Inside this pipe a tube is arranged which connects at different points along the line with the steam tubes therein, the requisite amount of heat being provided to keep the oil limpid and allow it to flow freely for any required distance. Before entering the conduit the oil is raised into measuring tanks, from which it passes through a tank having a pipe in it which is kept filled with steam, so that the temperature of the oil is raised to some extent before entering the conduit.

Claim.—First, the combination of steam generators, tanks, the conduit pipes and the steam pipe and their various connections, for conveying the oil or petroleum from the wells to the receiving, gauging, and heating tank, for raising it there to the proper temperature, and from thence conveying it to any required distance in the conduit pipes into other tanks, and maintaining its temperature while passing through the same by means of the small steam pipe and its connection with the generators.

Second, the arrangement of the small steam pipe or tube within the conduit pipe, whereby the introduction of steam into the small pipe will apply and communicate such an amount of heat directly to the oil, petroleum, or other substance in its flow and passage through the conduit pipe as will keep it in a fluid and flowing state and prevent the deposit and accumulation of the sediment or residuum of the oil or petroleum in the conduit pipes, it being held in solution by and carried off with the petroleum.

No. 47,702.—SALEM COPELAND, Worcester, Mass.—*Guard Fingers for Harvesters.*—May 16, 1865.—This invention will be understood from the claim and engraving.

Claim.—First, coring out the rear of the guard finger, in combination with fastening the steel plate by a short rivet, to secure lightness and greater uniformity in the metal thickness of the guard, in the manner herein described.

Second, coring out the rear of the guard finger, in combination with supporting the bridge *g* by an inclined brace *h*, substantially as and for the purpose described.

No. 47,703.—J. CRELLIN, Marshalltown, Iowa.—*Horse Hay Rake.*—May 16, 1865.—This invention relates to that class of rakes known as "revolving" or "tumbling" rakes. The teeth are constructed of two longitudinal strips of wood, secured to opposite sides of the head, and fastened together at their ends by metal tips. The draught bars are braced obliquely, the braces being grooved to bear upon the extremities of the head, which is made cylindrical for the purpose. There is a combination of frame levers and springs, by means of which the rake is unlocked and allowed to revolve, and again automatically locked in working position.

Claim.—First, the constructing of the teeth of two longitudinal parts *a a*, attached to opposite sides of the rake head A, and connected at their ends by metal tips *b*, substantially as described.

Second, the oblique braces C, attached to the draught bars D and arranged to rest or bear upon the cylindrical portions *c* of the rake head A, as set forth.

Third, the arrangement and combination of the frame I, pivoted to the outer part of the bars E E and the pendent frame G, the two frames aforesaid being connected by a rod H, and the frame G connected by springs *h h* with the bars E E, substantially as and for the purpose set forth.

No. 47,704.—JOHN H. DOOLITTLE, Ansonia, Conn.—*Machine for Making Clasps from Sheet Metal.*—May 16, 1865.—This invention consists of two pairs of revolving dies, adjustable to or from each other, as well as longitudinally on their axes. The first or forward pair cut out from the sheet and separate from it and from the waste a row or strip of blanks connected together, and feed them, by means of a bridge between the two, to the second pair of dies, by which they are bent to the proper shape, and are cut off and separated from each other.

Claim.—The combination of two or more sets of rotary dies to cut out and form the blanks, when constructed, arranged, and operating substantially as described.

Also, making the sets of dies adjustable, substantially as described, for the purpose of registering differently and adapting the machine to different kinds of work, as hereinbefore described.

Also, making one or both sets of the above-described dies adjustable in the direction of their axes, substantially as described, for the purpose of setting the dies in line, one set with another, as set forth.

Also, the employment, in combination with the female die *b*, of a sustaining and disengaging guide plate W2 as its equivalent, substantially as and for the purposes set forth.

Also, in combination with the rotary dies *c d*, the series of clearing figures 4 5 6, the whole arranged and operating as specified for the purpose set forth.

Also, in combination with the cutting-out dies *a b*, the cleaver and chute *h*, and deflector *i*, arranged to operate substantially as set forth.

No. 47,705.—G. W. Doty, Ravenna, Ohio.—*Siphon Bottle.*—May 16, 1865.—This invention consists of a bottle provided with a cork through which pass two India-rubber tubes. One of the tubes is attached to a glass tube, which extends down into the bottle, the said tube being turned up at its lower end to prevent the sediment from entering and going over with the decanted liquid.

Claim.—The tubes B and D, in combination with the tube E and bottle, when connected and arranged substantially as described.

No. 47,706.—Eben Edwards, Boston, Mass.—*Heating and Cooking Range.*—May 16, 1865.—In this invention the range proper is arranged in front of a chamber built of masonry, in which are flues for economizing and radiating the heat. In front of this and a little above the range is an oven. By the sides of the fire-pot are smoke chambers, and the products of combustion flow thence up and through the chamber surrounding the oven, and by a pipe in its rear into a drum at top and in the back of the flue chamber, and thence to the exit pipe. A pipe from near the fire chamber extends at a right angle at the back of this flue chamber, and communicates with the above-named drum. There are two horizontal tubes in either side of the range, one above the other, on one side the ends being open to the air. These serve as bearings for the grate journals, and admit air above or below the point of combustion.

Claim.—The above-described arrangement of the lateral conduits M M, the radiating drum K, the air-heating chamber P, the fireplace A, the smoke chamber B, the oven and its flue space G, connected with the fireplace and the radiator, as specified.

Also, the combination of the tubes V W leading out of one end of the fireplace and through the air chamber with the grate shaft, the fireplace, and the journal bearings *x x* at the opposite end of the fireplace, the whole being substantially as specified.

No. 47,707.—William H. Elliot, Plattsburg, N. Y.—*Cylinder Pin of Revolving Fire-arm.*—May 16, 1865.—In this invention the centre pin, on which the cylinder revolves, is made but slightly longer than the cylinder, and is provided at either end with a short cross head, the rear end of the pin being also furnished with a flat arm, which plays between the rear of the cylinder and the breech of the frame. A slot opening on one side from both the front and rear sockets of the pin, permits the cylinder and its centre pin to be inserted into the frame laterally, the cross heads of the pin passing into the said slots, and when in position a slight rotation of the pin by means of its rear arm serves to lock the same after the manner of a bayonet joint.

Claim.—First, locking the cylinder into the frame by turning the base pin upon its axis, substantially as set forth.

Second, providing a base pin, which locks the cylinder by being turned upon its axis, with a catch *d*, to prevent its from being turned back by accident, substantially as described.

No. 47,708.—Thomas Farnsworth, Cleveland, Ohio.—*Mangle.*—May 16, 1865.—This invention consists in the rollers being hung in hangers that work in connection with slotted frames or standards, and their combination with folding tables and an endless apron on rollers, the tension being kept up by springs.

Claim.—First, the arrangement of the hanger J and rollers A B, in combination with the spring *m*, screws *d*, and gearing G H, substantially as and for the purpose specified.

Second, the springs P and rollers *k*, in combination with the tables O P and apron R, when arranged and operating in the manner and for the purpose described.

No. 47,709.—William C. Fisher, Charlestown, Mass.—*Sash Supporter.*—May 16, 1865.—This invention consists in cutting away the corners of the window sash next the bottom of the grooves in which they slide, and attaching metal boxes, in which, at the bottom, is arranged a lever, and at the top a presser block. The said lever is suspended upon a fulcrum at its centre, one arm projecting upward and the other downward. In front of the downward end the metal box is cut away, so that the end of the lever may be pressed out into

notches in the side of the frame by means of springs, fastened to the back of the lower end, and against the other side of the box. The presser blocks are also pressed out against the upper part of the inside of the frame, which prevents the sash from rattling and keeps the joints tight.

Claim.—The levers D and notches *d*, operating substantially as described, for the purpose set forth.

Also, the presser blocks *e*, when used as an adjunct to the levers D, operating substantially as described, for the purpose specified.

No. 47,710.—E. F. French, New York, N. Y.—*Corn Huskers.*—May 16, 1865.—This invention consists in adding to the rollers commonly used two upright plates, or corrugated scrapers, placed directly underneath to prevent the husks from winding around the rollers.

Claim.—The employment or use of the plates or scrapers G, in connection with the rollers F F, arranged and applied to operate substantially as and for the purpose herein set forth.

No. 47,711.—Jacob Frick, Philadelphia, Penn.—*Shutter Fastening.*—May 16, 1865.—In this invention metal plates are fastened upon the inside of the shutters opposite to each other. One plate has a spindle projecting inward from it, upon which is pivoted an arm, which has upon its other end an eye through which another spindle passes, having on its inner end a lug or lever and upon its opposite end a flat-head, the shoulders of which are planes inclined in opposite directions. The said flat-head passes through an oblong opening in the plate upon the opposite shutter, the lever being held in a horizontal position, when, by turning the lever downward to a vertical position, the inclined planes engage with other inclines upon the opposite side of the plate, and draws the shutters together very tightly.

Claim.—The plate B, its arm D, spindle E, its head *g*, and inclined shoulders *x x*, in combination with the plate A and its slot X, the whole being arranged, operated, and adapted to shutters, substantially as and for the purpose herein set forth.

No. 47,712.—George H. Gardner, New York, N. Y.—*Revolving Fire-arm.*—May 16, 1865.—In this invention the pistol is provided with double cylinders, one immediately behind the other, one of the chambers in the forward cylinder being bored through, so as to act as the barrel for the rear cylinder. A catch is so arranged that either cylinder may have its charges successively fired before or after the other.

Claim.—First, the employment or use of two or more cylinders presented in the same direction, one behind the other, and arranged in combination with one and the same hammer, substantially as and for the purpose set forth.

Second, the slide I, applied in combination with two cylinders C C′, and hammer H, constructed and operating substantially as and for the purpose described.

Third, the spring catch *k*, applied in combination with the two cylinders C C′ and slide *i*, substantially as and for the purpose specified.

Fourth, firing the charges of the rear cylinder through the front cylinder, substantially as herein specified.

Fifth, the grooved-headed button *j′* of the slide *i*, constructed and adapted to operate as a sight, as herein explained.

No. 47,713.—Milton Gilmore, Morning Sun, Iowa.—*Cooking and Heating Stove.*—May 16, 1865.—This invention consists of a stove, provided with a hood, with a sliding door in front glazed in any suitable way. The fire pot is in the centre of the stove, with a direct draught, if required, or indirect, through flues over the oven, on either side of fire pot, down sides and underneath, and at the back of the stove, to exit-pipe. There are also flue passages in the double plates at the sides, on the back, and top of the hood. Suitable dampers control the draught, so that the radiation of heat can be easily regulated.

Claim.—First, the flues, leading from the fire pot F around ovens O O and between the plates forming the sides and top of the hood to exit-pipe, in connection with dampers *h h* and *p p*, in the manner and for the purpose set forth.

Second, the manner in which the fire pot is placed with grate and pit, as described.

Third, the combination and arrangement with fire pot F, of apertures 2 and 4 and dampers *p p*, substantially in the manner and for the purpose described.

Fourth, the hood of the stove, constructed and arranged with the flues wholly extending around side and top, in connection with the dampers *h h*, substantially in the manner and for the purposes described.

Fifth, the apertures A′ in the top of a stove, with side and top flues, and an illuminated sliding shield D′ D′, in combination with the fire pot F, in the manner and for the purpose set forth and described.

No. 47,714.—Alexander N. Glass and Henry W. Bartol, Philadelphia, Penn.—*Centrifugal Draining Machine.*—May 16, 1865.—This invention consists in increasing the thickness of the revolving plate at the edges, and forming a groove in the thick part to receive the wire-gauze. By this means the wire-gauze is prevented from being injured by the scoops used in removing the sugar from the bottom.

Claim.—In centrifugal draining or drying machines, the thickening of the primeter of the

bottom plate of the revolving cylinder, and forming a groove, recess, or shoulder therein, so that the bottom of the wire-gauze cylinder may rest therein and below the surface over which the instrument is moved in scooping out the sugar, by which means it is protected from injury, substantially as herein described.

No. 47,715.—ALEXANDER GRILLET, Philadelphia, Penn.—*Combined Implement for Detaching and Replacing the Parts of Small Arms.*—May 16, 1865; antedated May 1, 1865.—This device is so constructed that by means of two arms pivoted together the same carrying studs, the main-spring, can be retracted. A nipple wrench, worm, screw-driver, &c., are also attached, making one compound implement.

Claim.—First, the two arms A and B, hinged to each other and provided with the studs herein described, or the equivalents to the same, the whole being arranged for acting on the main spring of the fire-arm, substantially as described.

Second, the two arms A and B in combination with the movable stud *b*, its screw for carrying the wiper and the ball screw, and tumbler punch *e*.

Third, the combination of the two arms A and B with the cone and nipple wrench *a* at the end of the arm A.

Fourth, the screw-driver C and band punch *d* hung to a pin on the arm B, as set forth.

No. 47,716.—GEORGE HALL, Morgantown, West Va.—*Bread Slicer.*—May 16, 1865.—This invention consists in a peculiar arrangement of levers and links applied to a knife, and used in connection with a bed-piece, whereby the knife is made to operate with a drawing cut.

Claim.—An implement or device for cutting or slicing bread, meat, and other substances, composed of levers and links applied to or connected with a knife and bed-piece, in the manner substantially as described.

No. 47,717.—WILLIAM H. HARTMAN, Fostorio, Ohio.—*Motive Power.*—May 16, 1865.—In this invention rotary motion is produced by means of a pendulum similar to a clock movement.

Claim.—First, the special arrangement of the arms E F and plates I J in combination with the pinions *m n*, gear P, and disks H, when arranged and operating conjointly as and for the purpose set forth.

Second, the combination with the above plate *b*, pendulum C, springs *d*, in combination with the wrist *a* and arms E F, when operating conjointly as and for the purpose specified.

No. 47,718.—ROBERT HATRICK, Paterson, N. J.—*Tire-fastener.*—May 16, 1865.—This invention consists in forming a wedge-shaped dovetail recess in the edge of the tire, in which is fitted the corresponding-shaped head of a bolt, the shanks of which passes diagonally through the felly of the wheel, and is tightened by a nut on the opposite part inside. When the tire is without an inwardly projecting flange, the bolts are placed one alternately on each side of the felly.

Claim.—First, the arrangement of the felly A, tire C, and bolt E, as described—that is to say, the bolt passing or extending into a notch in the edge or cheek of the tire, and extending obliquely through the felly of the wheel, thereby securing the tire in position, as hereinabove set forth.

Second, so constructing the tire C and the head of the bolt E that the latter shall be dovetailed into the former, so as to resist lateral pressure in either direction, as set forth.

Third, the combination of the longitudinally wedge-shaped section of the bolt E with a wedge-shaped recess in the tire, substantially as and for the purpose set forth.

Fourth, the combination of a dovetailed recess in the felly A with a dovetailed recess in the tire C, and with a head so formed upon the bolt E as to fit both of said recesses, substantially as and to the effect above stated.

No. 47,719.—JOHN M. HAYWARD, Boston, Mass.—*Ambulance.*—May 16, 1865.—A saddle is provided with a socket of the shape of an inverted wedge, which receives the corresponding wedged-shaped legs of a stretcher. These legs extend downward through the socket so as to bear firmly against the side of the saddle. The socket is provided with an opening to allow of the passage of braces, which extend under the body of the stretchers for the purpose of giving it additional strength.

Claim.—Attaching the stretcher C to the saddle by means of the wedge-shaped legs *b* and corresponding socket *a*, substantially as set forth.

No. 47,720.—B. H. HEITMANN, Hoboken, N. J.—*Anchor Tripper.*—May 16, 1865.—This invention consists in certain devices for tripping the anchor of a vessel, whereby much time and labor is saved in throwing it off from the rail, it being only necessary to raise a lever which rests upon the rail in order to disengage both the shank painter and the ring stopper at one movement.

Claim.—The anchor-tripping device above described, consisting of the rotating bar or keeper D, with its troughs *f f* and the latches *c c*, constructed and operated substantially as above set forth.

No. 47,721.—Joshua Hendy, San Francisco, Cal.—*Blow Pipe.*—May 16, 1865.—In this invention the mouth-piece is at right angles with the eduction pipe, and is provided with a check valve. An elastic bag is fitted to a short pipe near the extreme end of the mouth-piece, and directly opposite the eduction pipe, as a reservoir to hold the air, the flow of which is controlled by a stop cock in the eduction pipe.

Claim.—The combination with the pipe A of the valve F, tube C, and elastic air chamber D, all constructed and arranged as and for the purposes specified.

Also, the combination with the pipe A of the valve F, tube C, and elastic air chamber D, and stop-cock H, when constructed and arranged as herein described.

No. 47,722.—William Henderson and J. W. Fowle, Boston, Mass.—*Starting Horse Railway Cars.*—May 16, 1865.—This invention consists in an arrangement of devices by which a ratchet, fixed upon one of the axles of a street car, may be operated by the foot of the driver, and also in a peculiar mechanism for engaging and disengaging the ratchet pawl for the purpose of assisting the horses in starting the car.

Claim.—The combination of the ratchet pawl, ratchet lever, foot rod, and lifting spring, when arranged to operate together, substantially as set forth.

Also, the combination of the rod *i*, spring *n*, rocker plate *k*, and rod *l*, for effecting the engagement and disengagement of the ratchet and pawl.

No. 47,723.—C. P. Hewett, Kingston, Wis.—*Railroad Car Axle.*—May 16, 1865.—This invention consists in constructing a railroad car axle of two separate parts, connected by a sleeve in such manner that one part of the axle with its wheel, may rotate independently of the other.

Claim.—The combination of the axles A A with their circumferential grooves *c c*, the sleeve B, the pins *d d*, with their set screws *e e*, and the lubricating orifice *f*, substantially as described and represented.

No. 47,824.—Lawrence Holmes, Paterson, N. J.—*Boring Wells.*—May 16, 1865.—This invention consists in a machine, the principal characteristic of which is that its driving gear rotates about, and its working parts are arranged around a central hollow shaft, concentric and parallel with the axis of the drilling tool, and the interior of which may be considered as a neutral or dead centre of the machine.

Claim.—First, in a machine for drilling oil wells, or other drilling operations, in which a jumping motion is given to the drill, so arranging and applying the driving wheel or other wheel or device, through which power is applied to produce the jumping motion, that it rotates about a hollow shaft or axle through which the drill-rod passes, substantially as herein described.

Second, the combination of the sleeve M, or its equivalent, fitted to slide upon the drill rod or bar D, or the tube E, from which it is suspended, the gripers L L, the shafts I I, and the cams K K, the whole arranged and operating substantially as herein described.

Third, the employment for lifting and jumping the drill or boring tool by means of a rope and gripers, or a tube E, clamped to the rope, but adjustable lengthwise thereon as the tool descends, substantially as herein specified.

Fourth, in combination with the longitudinal groove *h* in the tube E, from which the drill or boring tool is suspended by a rope, a pawl *i*, so applied to the driving wheel G, or other device from which the rotary motion of the tool is obtained, as to provide for the release of the said rod, bar, or tube, to allow the rope to relieve itself or be relieved of excessive twist, substantially as herein described.

Fifth, the combination of the hollow central shaft C, internally toothed driving wheel G, shafts I I, pinions J J, cams K K, sleeve M. or its equivalent, and gripers L L, the whole arranged and operating substantially as and for the purpose herein specified.

Sixth, the arrangement of the standard B, the fixed hollow upright shaft C, through which the drill-rod passes, and the driving wheel G, substantially as herein described, whereby a clear space is left all around the said wheel to permit it to be operated by means of beams or capstan bars, as herein set forth.

No. 47,725.—B. B. Hotchkiss, New York, N. Y.—*Packing Projectiles for Rifled Ordnance.*—May 16, 1865.—The Hotchkiss projectile is provided with a cap of the same diameter with the main body, and connected with the main body by means of a lead casting placed between. Within the cap, and between it and the head of the main body, is a cavity, about one-fourth of the width of which is taken up by a disk of pine wood. When the projectile is fired out of a gun, the force of the explosion drives the cap forward with such force as to render liable the fracture of one or both parts. The elasticity of the wooden disk, by gradually arresting the motion, saves the parts from fracture.

Claim.—The employment of the soft disk or cushion D, in combination with a Hotchkiss projectile, and arranged to operate in connection therewith, substantially in the manner and for the purpose herein set forth.

No. 47,726.—Henry M. House, Washington, D. C.—*Movable Joint for Tables.*—May 16, 1865.—This invention consists in arranging two plates of metal so that when they are screwed on the part of the article to be joined their faces will be at right angles with each other. Upon the back of one plate there are two hooks, having in them slots; upon the back of the other is a stud, which has a mortise corresponding with the slots in the other plate. When the two plates are put together a key is driven through the mortise and slots, holding them tightly together.

Claim.—The combination and arrangement of the parts, which consist of the plate A, with the mortised stud B attached, a hooked flanch D, and a tapering key C, the same being applicable for fastening all movable joints in the manner described, for the purposes herein set forth.

No. 47,727.—S. R. and W. S. Hunter, Cortland, N. Y.—*Boring Apparatus.*—May 16, 1865.—This invention consists in an apparatus for sinking wells, and simultaneously lining the same with suitable tubing, so that the drilling rod shall be at all times protected from contact with the material through which the well is sunk, and the water will find free inlet to the well so soon as the stream is reached.

Claim.—The combination of a boring or drilling tool *a* with the lower end of a cylinder or tube A B, and with a detachable drilling rod E, for the purpose of boring and bottoming a well, when said cylinder or tubing is smaller in diameter than the upper end of the tool *a*, and is made to rest thereon, substantially in the manner herein set forth.

Also, the combination of the hand lever G with the frame-work M N, the drill-rod E, and tubing B, arranged and constructed substantially in the manner and for the purpose herein set forth.

No. 47,728.—William H. Hunter, Bridgeport, Ill.—*Corn Planter.*—May 16, 1865.—In this invention, the seed-slide is operated by a hinged forked-lever. This lever is operated by adjustable and removable cams upon the spokes of the single draught-wheel.

Claim.—First, adjustable slide B, constructed, arranged, and operated substantially in the manner and for the purpose described.

Second, jointed or hinged lever T, reel P, and vertical standard N, constructed and operated substantially in the manner and for the purpose set forth.

Third, the blocks or cams L L, attached to the spokes of the wheels by set screws when said cams are made adjustable or movable, in combination with the hinged lever T, rod P, verticle standard N, as specified.

No. 47,729.—Walter Hyde, New York, N. Y.—*Boring Wells.*—May 16, 1865.—The objects of this invention are to operate the drill-rope, to provide facilities for arresting the motion of the drill without stopping the machinery, and also to provide facilities for changing the action of the motor force (that of operating the drill) to that of withdrawing it.

Claim.—First, the combination of the reserve rope drum L, the sheave J, the vibrating lever G, and its pulley F, the upper pulley C, the rope D, drill-stock and tripping cams, so that all the motions of the drill-stock are governed through the medium of a continuous rope.

Second, attaching the end of the drill-stock to a continuous rope, which is paid out as is required, by the settling of the drill in the well, in connection with devices by which the rope is swayed or retracted to give the reciprocating motion to the drill-stock, and with devices by which the drill-stock is withdrawn without detaching the rope or stopping the motion of the prime motor.

Third, the lever U, in combination with the plate V, or other detail for arresting the motion of the vibrating lever.

Fourth, in connection with the subject-matter of the second claim, the lever W, as a means of changing the action of the motor from a drill-operating mechanism to a drill withdrawing mechanism.

No. 47,730.—Melvin Jinks, Dansville, N. Y.—*Mop.*—May 16, 1865.—This invention consists in the use of certain devices designated in the claim, for the purpose of forming a wringing mop.

Claim.—The bars *d* and *g*, the handle A, the sleeve *b*, and the rods C C, the whole arranged as and for the purpose herein specified.

No. 47,731.—Josee Johnson, New York, N. Y.—*Fruit Jar.*—May 16, 1865.—This invention consists in providing a fruit jar with a protecting frame composed of two side pieces of wood or other material, connected together by the pieces, and the cover is kept in its place by means of the screw passing through the piece.

Claim.—First, enclosing the inner or tin can A within a casing G H I J wider than the can A, so as to protect it from the pressure of the adjacent cans in being filed, without the necessity for closing the remaining faces of the casing, all substantially as and for the purposes herein set forth.

Second, the screw D, or equivalent mechanical device, in combination with a detachable and protecting case, and adapted to compress the cover C and the can A firmly together, and

to release the same, as described, substantially in the manner and for the purposes herein set forth.

Third, in combination with a protected can A, locking together the parts of the protecting envelope, by inserting the ends of the cross-pieces G and H into channels in the parts I and J, at a considerable distance from the ends of the latter, so as to strengthen the envelope and protect the head of the thumb screw D, or its equivalent, by the projecting ends of I and J, substantially as herein set forth.

No. 47,732.—W. J. JOHNSON, Newton, Mass.—*Flour Sifter.*—May 16, 1865.—This invention consists in combining with a common hoop-sieve, a rotating scraper, moved by a shaft and crank, for the purpose of agitating and forcing the flour through the sieve, for family purposes.

Claim.—Combining with a common hoop-sieve, a rotating scraper D, actuated and guided by the shaft E, crank F, and bar C, or their equivalents, substantially as and for the purpose described.

No. 47,733.—HENRY S. KASSEBAUM, New York, N. Y.—*Portable Lantern.*—May 16, 1865.—The nature of this invention consists in the construction of a portable lantern, with pasteboard top and bottom, and sides of folded paper or muslin.

Claim.—The folding sides, in combination with the top and bottom, and handle for carrying the same, substantially as described and for the purposes set forth.

No. 47,734.—GIBBONS L. KELTY, New York, N. Y.—*Window Shade.*—May 16, 1865.—On the surface of window shades, are affixed ornaments of paper or muslin, on which printed or embossed figures may be executed, if desired, so as to form additional ornaments of great beauty, at a trifling expense.

Claim.—Manufacturing muslin window shades, with paper or other suitable material attached to the surface of such shade, and forming the ornaments to the same, or receiving printed or embossed designs, as specified.

No. 47,735.—W. W. KITHLEMAN, Bloomfield, Iowa.—*Hames-fastening.*—May 16, 1865.—This invention consists in a pivoted loop-catch, applied to one of the parts of the hames, in connection with a perforated link, which is pivoted to the other part of the hames, and has its free end passed through the loop-catch, and retained by means of the tongue of the loop.

Claim.—First, the link D with oblique slots through or in it, in the manner and for the purpose described.

Second, the combination of the groove *d*, shoulders *c*, and slots or holes *c c*, in the manner and for the purpose described.

Third, the loop-catch *c*, constructed as described, for the purposes set forth.

Fourth, the combination of the hames, loop catch, and link D, constructed, applied, and operating substantially as herein described.

No. 47,736.—JOHN LACY, Chicago, Ill.—*Horse Rake.*—May 16, 1865.—This invention consists in making the arms of the axle vertically adjustable, and in supporting the foot rack by which the rake is filled, by braces, which are also vertically adjustable.

Claim.—First the arms G of the axle, when provided with a projection and holes *i i*, for raising or lowering the axles.

Second, the foot rack F F and *a*, when supported by braces provided with holes for raising and lowering it.

Third, the combination of the foot rack F F, braces H H, and treadle E, with the axle A, all being arranged, constructed, and combined, substantially as set forth and specified.

No. 47,737.—W. BARNET LE VAN, Philadelphia, Penn.—*Pump.*—May 16, 1865.—This invention relates to an improvement in the construction of pump pistons, for the purpose of rendering cupped leather packings more durable by sustaining them in correct form and position, when in use; and also of a combination of valves therewith, for easy access for inspection and cleansing.

Claim.—The plunger B, composed of the parts J K L M N O and P, as described.

Second, the channel-way D E, and valves F and G, arranged in relation thereto, as drawn and described.

No. 47,738.—JUDAH LEVY, Philadelphia, Penn.—*Hoop Skirt.*—May 16, 1865.—In this invention the hoop passes through a pocket on the inside of the vertical tape. A strip of skirt wire then clamps the tape to the hoop on the outside, said clamping strip being held to the hoop by the clasps.

Claim.—The strip D, of steel or other elastic material, secured to the hoop A by the fastenings E, or their equivalents, and arranged in respect to the tape B and its loop or hole *a*, as set forth, for the purpose specified.

No. 47,739.—THOMAS LINDSAY, Montville, Conn.—*Rag Engine for Paper Making Machine.*—May 16, 1865.—The claim defines this invention.

Claim.—Giving an endwise reciprocating motion to the beater of a pulping engine, in addition to its usual motion, substantially as above described.

No. 47,740.—Joseph L. Lowry, Pittsburgh, Penn.—*Construction of Ordnance.*—May 16, 1865; antedated April 29, 1865.—This invention consists in forming a cannon of two or more cast-iron cup-shaped shells or cylinders of equal thickness, and different qualities of metal, varying in degrees of density, placed one within the other, the interstices between the same to be filled up by a suitable composition to become solid and transmit the strain. A cavity is left around the vent to allow it to expand without producing any injurious effects.

Claim.—Forming cannon or heavy ordnance of two or more cast-iron cup-shaped shells of equal thicknesses and different qualities of iron, varying in degrees of density, placed one within the other, and secured in the manner shown, the inner and longest one being of very hard iron, (to prevent cutting by the shot,) and least expansible, while the exterior and shortest one is of softer and very tough expansible cast-iron, to support the inner one, and aid in resisting the explosive force of the powder.

Second, forming a cavity or chamber around the vent-tube, so as to allow of its expansion without affecting the body of the gun.

No. 47,741.—George M. Morris, Roxbury, Mass.—*Spring Bolt-catch.*—May 16, 1865.—This invention consists in arranging in the place of the ordinary cam a friction roller, so that the bevelled side of the bolt will strike it when the door is being shut, in the same manner as it strikes the cam in the ordinary way, the roller driving the bolt back with much less friction.

Claim.—The spring bolt-catch plate, made with the bolt and roller recesses, and having the friction roller and the extension for supporting it, the whole being arranged substantially as hereinbefore explained.

No. 47,742.—Herbert A. Morse, Canton, Mass.—*Machine for Cutting Tobacco.*—May 16, 1865.—In this invention, the knife, that is raised by a lever, and toothed sector, has a single guide-frame, and is kept in position by a parallel bar and projection.

Claim.—The combination of the single guide-frame A, guide-bar D and its projections or guides, with the knife C, the lever B, the toothed sector *e*, and the rack *d*, the whole being substantially as specified.

No. 47,743.—A. Prescott Nash, Weymouth, Mass.—*Boot Leg.*—May 16, 1865.—This invention consists in the manufacture of boot legs, by making them corrugated in the direction of their length. for the purpose of improving them in appearance, and they are so stiffened as to prevent their breaking down and wrinkling. The invention is particularly adapted to the manufacture of legs from very light leather.

Claim.—A boot leg when corrugated, substantially as and for the purpose specified.

No. 47,744.—Waterman L. Ormsby, Jersey City, N. J.—*Bank-note Engraving.*—May 16, 1865.—This invention consists in making a continuous line by a repetition of dots; also a circular figure by repeating figures or numbers, or any geometric figure by the same process.

Claim.—First, the process by which lines for note engraving are formed, consisting in the repetition of a dot, substantially as and for the purposes specified.

Second, the process by which a circular figure for note engraving is produced by the repetition of a number, figure, or word, to form each circle of a series of concentric circles, substantially as specified.

Third, the process herein specified, by which a geometrical or mosaic figure for note engraving is formed by the repetition of letters, words, designs, or figures, around a series of separate centres, substantially as specified.

No. 47,745.—Waterman L. Ormsby, Jersey City, N. Y.—*Apparatus for Engraving Metallic Plates.*—May 16, 1865.—This invention consists of a series of bed plates, having a sliding and rotary adjustment by means of screws, and a circular, engraved hammer fixed to an adjustable fulcrum, by means of which a great variety of figures can be spaced and repeated in a variety of forms with great accuracy and speed.

Claim.—First, a circular hammer having several designs in relief around its edge in combination with the dog *g*, substantially as specified.

Second, raising or lowering the back end of the design hammer, substantially as specified, for causing the design on the hammer to coincide with the surface of the plate, as set forth.

Third, the plate *e*, adjustable as specified, in combination with the plate *c* and design hammer, for the purposes of adjusting said hammer, as set forth.

Fourth, the combination of two circular beds *o w*, with the right angled slides *s u*, forming a universal bed for adjusting the position of the plate to be engraved, as set forth.

Fifth, the universal bed for carrying and adjusting the plate as aforesaid, in combination with the design hammer, substantially as and for the purposes specified.

No. 47,746.—Nelson Palmer, Hudson, N. Y.—*Threshing Machine.*—May 16, 1865.—In this invention the grain is passed to the threshing cylinder, transversely by a toothed cylinder provided with a guard for preventing the breaking of the straw. The straw after

leaving the threshing cylinder is carried up transversely by the straw carrier, and delivered in good condition for binding.

Claim.—First, the method herein specified of threshing grain transversely by the combined action of the feeding device, the corrugated cylinder and the curved rubber, as set forth.

Second, a revolving cylinder armed with teeth or spikes, in combination with the guard *g* for feeding in the straw or stalks transversely to the threshing mechanism, substantially as specified.

Third, the guard *g*, in combination with the feeding cylinder *h*, threshing cylinder *b*, and concave rubber *c*, substantially as specified.

No. 47,747.—WILLIAM H. PECKHAM, New York, N. Y.—*Railway Chair.*—May 16, 1865.—This invention has for its object the firm clamping and holding of railroad rails at their points of junction by movable jaws, in connection with one or more screw bolts and nuts.

Claim.—The railroad chair herein described for clamping and holding the contiguous ends of rails, the same consisting of a movable jaw or jaws made to form close bearings with the sides of the rail, by means of one or more screw bolts and nuts, arranged and operating as described.

No. 47,748.—WALTER S. PHELPS, Columbus, Ohio.—*Steam Engine.*—May 16, 1865.—This invention consists in a vertical cylinder, with a cross-head attached to the piston-rod thereof, so arranged that a connecting rod extends from each end of it to a central shaft upon which are wheels that work into a pinion, placed upon the propeller or main shaft, the axis of which is directly below the cylinder, and in a line with the axis thereof. The vertical connecting rods are connected together by a parallel rod extending from one to the other end, by which means they are always kept in their proper positions.

Claim.—The arrangement of the vertical cylinder connecting rods, crank shafts, and propeller or power shafts herein recited.

No. 47,749.—EDWIN H. REYNOLDS, Rising Sun, Md.—*Foot Stove.*—May 16, 1865; antedated May 9, 1865.—This invention consists in a foot stove of oblong shape, having the top plate of the lid perforated, and the under plate arched at the centre; an oil reservoir is placed at the bottom of the box with a central depression, to which is connected a lamp burner with a perforated cylinder surrounding it, and passing through a diaphragm extending across the stove above the reservoir; perforations in the side of stove above and below this diaphragm admit air for combustion.

Claim.—The reservoir E, burner F, with its cylinder G and the partition H, the whole being arranged in respect to the case A, and the openings *a* and *b* in the latter, substantially as and for purpose specified.

No. 47,750.—LOUIS SHULTZ, Buffalo, N. Y.—*Medical Compound.*—May 16, 1865.—This invention consists of an extract made of the following materials: four bushels of malt, four ounces of hops, six ounces of onions, four ounces of Irish moss, and eight ounces of Iceland moss.

Claim.—A medical compound, composed of the ingredients herein mentioned, combined substantially in the manner and proportions herein set forth.

No. 47,751.—JOHN W. SIMONTON and O. T. STRUBLE, Taylorville, Ind.—*Rotary Steam Engine.*—May 16, 1865.—The object of this invention is the use of steam in a rotary engine for propulsion in a more economical manner, or to more advantage than usually attained. Its novelty consists in the combination of the abutment, reversing valve, and the arrangement of a series of chambers with the eduction passages.

Claim.—First, the combination of the revolving valve D D′, with the abutment R R, having induction ports through it, substantially as described.

Second, the arrangement of the chamber C A and B, and the eduction passages H and F, substantially as shown and described.

No. 47,752.—WM. T. SLOCUM, Philadelphia, Penn.—*Smoking Pipe.*—May 16, 1865.—This invention consists of a pipe with the usual bowl and receptacle for "oil," beneath the stem the latter being so divided by a partition that the smoke from the tobacco must pass from one portion of the stem into the receptacle before again entering the stem, and so that the moisture from the upper end will collect in the receptacle, and not be permitted to enter the bowl.

Claim.—The stem B, with its partition *a*, projection *l*, and openings *x* and *x′*, in combination with the detachable reservoir F and bowl A, substantially as and for the purposes pecified.

No. 47,753.—FRANCIS F. SMITH, Collinsville, Conn.—*Plough Casting.*—May 16, 1865.—This invention consists in the construction of the share, land-side and mould-board of ploughs, of iron faced with steel by first casting the two metals in the form of an ingot, one surface being of iron, and the other of steel, and afterwards heating and rolling this ingot into a plate of the proper thickness, and cutting and bending the same to the proper form.

Claim.—As a new manufacture, plough plates made of semi-steel or iron plated or faced with cast-steel.

No. 47,754.—Wilson H. Smith, Birmingham, Conn.—*Packing Projectiles for Rifled Ordnance.*—May 16, 1865.—A cylindro-conoidal shot is provided upon its rear end with a concentric projection of a smaller diameter, upon which is fitted a packing ring, in which are transverse grooves. A cap bears against the packing ring upon the concentric projection. Between the head of the cap and the head of the projection is an empty space of a width equal to the sum of the width of the grooves in the packing ring, so that when the shot is fired by the force of the explosion the cap is driven forward just far enough to close all the grooves, and force the packing ring out just far enough to enable it to take in the grooves of the gun.

Claim.—The employment, in combination with a projectile of a corrugated or grooved packing, and a follower or tail piece, the whole arranged to operate in the manner and for the purpose substantially set forth.

No. 47,755.—C. Edward Sneider, Baltimore, Md.—*Breech-loading Fire-arms.*—May 16, 1865.—In the breech is a chamber forming a continuation of the bore to receive the cartridge, of such external shape as that the flange of the cartridge projects so as to admit of being firmly grasped by the fingers, and thus facilitating the removal of the exploded shell. The hinge upon which the barrel turns in being opened for the insertion of cartridge is a cam lug of such form as during the opening movement of the barrel to force a pin occupying a hole in the breech up against the striking face of the hammer, and thus throw the hammer back far enough to cause the trigger to engage with a safety notch, and to prevent the exploding pin as it is slid back by the cartridge during its insertion from striking the hammer. These devices are for the prevention of premature explosion.

Claim.—First, the backward projection A of the charge chamber, constructed as described to permit the ready removal of the cartridge shell with the thumb and finger, in combination with the chamber D′, inclosing the said projection A, while in position for firing.

Second, in combination with the above, the pin or screw *d*, employed to start the shell of the exploded cartridge during the opening movement of the gun, substantially as described.

Third, the pin G, in combination with the cam lug F, the two operating in the act of turning the barrel to throw the hammer to the point at which the safety notch engages with the trigger to retain the hammer in a retracted position, and thus allow the exploding pin I to move freely to the pressure of the base of the cartridge during the closing movement of the barrel, substantially as set forth.

No. 47,756.—Howard Tilden, Philadelphia, Penn.—*Flour Sifter.*—May 16, 1865.—This invention consists of a cylindrical case of tin, within which, at its axis, is placed a shaft, so as to revolve freely. Upon said shaft is affixed a rubber, consisting of four radial arms, forming in reality two diametrical arms, to the under sides of which are attached semicircular rubbers. These rubbers work in a hemispherical sieve of a diameter nearly equal to that of the cylindrical case. The flour is poured in at the top of the case, and the shaft with the rubbers being revolved, the flour is ground between the rubbers and the sieve.

Claim.—The combination of the case A, the concave sieve B, the cross beam C, the horizontal cross arms D D, bottom E, spout F, base G, slide H, flange I, the rubber scrapers J J J, radial arms K K K K, the shaft and crank L, as and for the purpose set forth.

No. 47,757.—Charles B. Tucker, of Cambridgeport, Mass.—*Bed Bottom.*—May 16, 1865.—This bed bottom consists of a series of steel spring bars arranged longitudinally of the bed frame, one end of each spring bar being rigidly confined, and the other being free upon a roller. When the bars are depressed by the weight of a sleeper the roller relieves the spring of any friction wear and noise that might otherwise be produced.

Claim.—The improved spring bed bottom so constructed of the springs C C C and the rollers *h h h*, arranged and combined together with the frame A, substantially in manner and so as to operate as hereinafter specified.

No. 47,758.—Edward A. Tuttle, Brooklyn, N. Y.—*Latch.*—May 16, 1865; antedated May 5, 1865.—This invention consists in giving to the bevel of the latch bolt a greater extension, by means of a web or fin projection, from the inner surface of the bolt, and for which a channel or groove is made in the surface of the door. In thus increasing its length the bevel is of course made correspondingly more obtuse, and the bolt thus offers less resistance to the force applied to retract it as it sticks against the housing in the catch.

Claim.—The bevelled tongue C, or its equivalent, applied to a lock or latch, substantially as shown and described, for the purpose set forth.

No. 47,759.—Stephen Wilcox, jr., Westerly, R. I.—*Hot Air Engine.*—May 16, 1865.—This invention is of the class in which fire is subjected to pressure, and the gaseous products of combustion are passed through the working cylinder. The cut-off mechanism which regulates the admission of hot air to the cylinder is made adjustable, so as to cut off early or late in the stroke, as may be desired. The effect of cutting off early is to

accumulate pressure in the interior of the engine, for as soon as the supply is cut off a less amount of gas escapes through the eduction valves than when the supply is continuous. The heat of the furnace is increased in consequence of the higher pressure of the air therein. Therefore, when it is desired to increase the heat of the furnace, it is only necessary to adjust the mechanism so that it will cut off early. Hot and cold air are automatically admitted in the proper proportions. The heat due to compression is absorbed and utilized. The engine may be relieved from pressure preparatory to replenishing the fire, or the like.

Claim.—First, in combination with an engine in which the combustion is conducted under the working pressure, the employment of an adjustable cut-off mechanism, arranged to operate therewith, substantially in the manner and for the purposes herein set forth.

Second, the controlling chamber Q, orifice *q*, and screw plug i^3, arranged relatively to the piston i^2, and to the induction valve I and its connections, substantially as and for the purpose herein set forth.

Third, the combination of thermostat R T, or its equivalent, with the regulating valve U, the two channels H and H′, and the engine A *a*, the whole being so arranged as to automatically control the proportions of air relatively to the gaseous products of combustion actuating the engine, substantially in the manner and for the purpose herein set forth.

Fourth, the pump V and pipes v^4 and G, or their equivalents, arranged relatively to the compressing parts A *a* and heating parts B, &c., or their equivalents, substantially as herein described, so as to cause the water to perform the several functions in the manner herein set forth.

Fifth, the arrangement of the inhaling valve F and lever W, or its equivalent, substantially as and for the purpose herein set forth.

Sixth, connecting the circular door X to the hinged bar or arm L, by the hollow bolt *x* and stem *x′*, or their equivalents, so that the door may be readily released and ground, and again secured, in the manner substantially as herein set forth.

Seventh, the guard lips X′ and Y′ arranged relatively to the door X of the furnace, and to the ground surfaces on the same, and on the door frame Y, substantially as and for the purpose herein set forth.

No. 47,760.—C. H. WILDER, Argyle, Wis.—*Breast Pump.*—May 16, 1865.—The claim and engraving explain the nature of this invention.

Claim.—First, the application to the mouth of a breast pump of a supporting screen, constructed and operating substantially in the manner and for the purposes set forth.

Second, the employment or use of an extension mouthpiece D applied in combination with the supporting screen and with the suction pipe of a breast pump, substantially in the manner and for the purpose described.

No. 47,761.—MORGAN WILLARD, Cincinnati, Ohio.—*Hoisting Machine.*—May 16, 1865.—This invention consists of two hollow columns with a continuous female screw upon the inside of each, and slots through the sides of said columns extending throughout their whole length. Within each column in the line of its axis is a revolving shaft bearing a worm arranged to slide up and down upon said shaft, and engaging with the screw upon the inside of the column. These worms support a platform or "dumb waiter," which is thus made to ascend or descend as the shafts within the columns are rotated.

Claim.—The hollow columns G G, with the continuous thread or screw D′, and the continuous slots or openings in or through the sides of said columns G G extending throughout their length, in combination with the bolt or worm D, with the shaft or rod C, all arranged, actuated, and combined, substantially as set forth and described.

No. 47,762.—J. B. WOOLSEY, Bloomfield, Iowa.—*Hames Fastener.*—May 16, 1865.—This invention consists in a spring for a hame fastener formed of a flat metallic spring secured to the boss by pintles projecting through its sides, the spring tapering about midway of its length, and its reduced end passing through a slot or perforation in the catch of the fastener.

Claim.—Combining the spring *c* with the catch C, in the manner and for the purpose as described.

No. 47,763.—E. M. WRIGHT, Wilmington, Ohio.—*Churn Dasher.*—May 16, 1865.—This invention consists in the employment of oblique stops on the lower side of the oblique wings of the dasher, the obliquity of the stops being in the opposite direction to that of the wings themselves.

Claim.—The stops *d d* arranged upon the lower surfaces of the dasher wings, substantially as and for the purpose herein specified.

No. 47,764.—CHARLES B. BRISTOL, assignor to himself, WILLIAM W. HUGHES, WILLIAM H. ANDREWS, and L. J. BRISTOL, New Haven, Conn.—*Snap Hook.*—May 16, 1865.—This invention consists in a harness snap in which the tongue is combined with the spiral spring, the latter working upon the tension principle, and the fulcrum pin cast in one of the ears, and a recess or cavity so arranged as to be closed after the spring has been introduced.

Claim.—First, the combination of the tongue *g* with the spiral spring (Fig. 4) when the spring works on the tension principle, and rests in a recess (as *r*) in the rear end of the tongue, substantially as described.

Second, the combination of the fulcrum pin *n* with the tongue *g* when the pin *n* is cast in one of the ears, and the recess or cavity is fitted to be closed, substantially as herein described.

No. 47,765.—EBENEZER BROWN, assignor to S. E. BROWN, South Boston, Mass.—*Metallic Thill Holder.*—May 16, 1865.—This invention consists in making the thill holder, usually made of leather, of iron, and in casting the two loops for the tug strap and the girth in one piece with it, and the tug-strap buckle attached thereto.

Claim.—First, casting the tug-strap loop and the shaft-girth loop in one with the thill holder, substantially as and for the purpose described.

Second, casting the tug-strap buckle in the metallic thill holder, substantially as set forth and for the purpose described.

No. 47,766.—ROBERT H. DAVIES, assignor to himself, JAMES W. LANDELL, and THOMAS J. YOUNG, Philadelphia, Penn.—*Steam Engine.*—May 16, 1865.—This invention consists in arranging a heater for the feed water between the cylinder and the boiler, one end of which heater is made fast to the boiler, while the other end rests upon it only. In the rear of the heater a saddle is secured to the boiler, upon which the pedestals which support the main shaft are placed. This saddle is detached from the heater, and the whole is so arranged that the expansion of the boiler does not affect the engine at all so far as strain consequent upon such expansion is concerned.

Claim.—First, the heater D, used as a bed plate, detached from the supports of the pedestals E and fixed to the boiler in such a manner as to prevent the expansion of the boiler from putting a strain upon the engine, substantially as shown and described.

Second, the arrangement of the saddle F, cylinder B, side bars C, heater D, and boiler A, substantially as described.

No. 47,767.—JAMES ECCLES, assignor to himself and ROBERT KERSHAW, Philadelphia, Penn.—*Machinery for Oiling Wool in Carding Machines.*—May 16, 1865.—In this invention the drum revolves within the reservoir. The piece of cloth so hangs that the drum in revolving is wiped by the cloth, from the pendent edge of which, outside the reservoir, the oil drips upon the wool on the feed apron.

Claim.—Lubricating wool by means of a strip or apron of suitable textile fabrics, to which a continuous supply of lubricating material is transferred from a reservoir by means of a drum or roller, or its equivalent, all substantially as set forth.

No. 47,768.—JOHN MARTINO, assignor to STUART & PETERSON, Philadelphia, Penn.—*Coal Sifter.*—May 16, 1865.—This invention consists of a sieve with a handle and spout arranged in respect to the ash chamber and grate of a cooking stove, so that it will readily catch the ashes falling from the grate, and by its aid said ashes may be sifted, and the cinders deposited in the fireplace without permitting the dust to escape into the room.

Claim.—The sieve G, its handle *h*, and spout *f*, arranged in respect to the ash chamber R and grate *a* of a cooking stove, substantially as and for the purpose herein set forth.

No. 47,769.—JAMES M. JAY, assignor to W. H. ALEXANDER & CO., Canton, Ohio.—*Machine for Making the Spindles of Wagon Axles.*—May 16, 1865.—The object of this invention is to make the spindles of axles by machinery, at the same time cut the groove for the skein and the linchpin hole. It consists, also, of a conical revolving hollow cutter, with a shoulder cutter on the base of the cone feed gear to move the axle to the cutter, and a grooving cutter, which at the proper time is brought in contact with the dressed spindle of the axle and cuts the groove for the skein and a linchpin borer, all operated by a series of sequent and automatic movements, that complete the spindle on one end of the axle at a single operation.

Claim.—A machine for turning the journal or spindle for cutting the groove therein, and for boring the linchpin holes of wooden axles, the same being combined and arranged to operate in the manner and for the purpose substantially as set forth.

Also, in a machine for cutting journals or spindles on axles, the revolving tapering cutter-head, with its cutters *e e'*, as and for the purpose described.

No. 47,770.—GORDON MCKAY, Boston, Mass., and LYMAN R. BLAKE, Quincy, Mass., assignors to GORDON MCKAY aforesaid.—*Turned Shoe.*—May 16, 1865.—This invention consists in a boot or shoe, as a new article of manufacture, when made up inside out, and with chain stitches, which pass squarely through the sole and vamp, and without having any cut or gash made in the sole, on or from its inner surface. By this construction the whole of the material in the sole is made available for wear, while in all other turned shoes the amount of wear is diminished by the cut which in them is made in their inner surface.

Claim.—As a new article of manufacture, a boot or shoe made as a "turn," with the vamp and sole, united with chain stitches passing entirely through the material, both of the vamp and sole, and with the chain of the stitches upon the inside of the article when in its finished state.

No. 47,771.—GEORGE H. MEEKER, assignor to LACY, MEEKER & CO., Bridgeport, Conn.—*Riding Saddle.*—May 16, 1865.—This invention consists in making the saddle skirts with projections, to partially support the calves of the legs, by swaging the leather skirts, filling the cavities with sawdust, &c., and covering the inner side of the skirt with leather.

Claim.—The forming of the projections, or calf and thigh supports, on the skirts of a riding saddle, by means of swaging, substantially in the manner as herein shown and described.

No. 47,772.—JOSEPH MONTGOMERY, JAMES MONTGOMERY, and EVAN DAVIS, Baltimore, Md.—*Grain Separator.*—May 16, 1865.—This invention consists in placing revolving shafts just over, and using them in combination with, the fan screen.

Claim.—The revolving rake shafts C, in combination with the fan screen *e*, substantially in the manner and for the purposes herein set forth.

No. 47,773.—CHARLES R. OTIS, assignor to himself and NORTON P. OTIS, Yonkers, N. Y.—*Steam Hoisting Apparatus.*—May 16, 1865.—This invention consists in applying to a hoisting apparatus an automatic stop-motion, in such a way that the engine which propels it can be stopped, or its motion reversed, at any time during the up or down movement of the platform. This is accomplished by attaching to the valve of the engine a device, to be operated by the drum, driven by the engine by means of gearing and a shaft. A clutch is so arranged that when the platform arrives at a certain point, or when the engine has made a certain number of revolutions, the clutch operates to close the valve, and thus prevent the admission of steam to the engine, and its motion is arrested at any given point.

Claim.—Combining the stop-valve of the engine of a steam hoisting apparatus with the shaft *h* of the main drum, or with any other shaft or counter shaft of the hoisting apparatus, by means of a stop motion constructed, applied, and operating substantially as herein specified.

No. 47,774.—JAMES N. PEASE, Panama, N. Y, assignor to M. HARRIS and R. G. BUSH.—*Clothes Wringer.*—May 16, 1865.—This invention is explained by the claim and engraving.

Claim.—The two fixed gears E F, in connection with the wrist *e* and slotted crank G, or their equivalents, all arranged and applied to the rollers of a clothes-wringing machine, to operate in the manner substantially as and for the purpose herein set forth.

No. 47,775.—JOHN H. VICKERS, Worcester, Mass., assignor to himself and L. W. POND, of same place.—*Revolving Fire-arm.*—May 16, 1865.—Within the chambers of the cylinder of a revolving pistol are inserted removable thimbles for the reception of metallic cartridges. To the under side of the barrel in front of the cylinder is attached a stem of the same diameter with the thimbles. The thimble is pushed upon the stem after the charge is fired, and the stem forces the empty cartridge from the thimble.

Claim.—The application to the barrel of revolving fire-arms of a hinged stem E, for supporting the thimble, and cleaning it when removed from the cylinder A, substantially as and for the purpose described.

No. 47,776.—WILLIAM W. W. WOOD, Philadelphia, Penn., and JOHN L. LAY, assignors to DONALD MCKAY, East Boston, Mass.—*Submarine Explosive Shell.*—May 16, 1865; antedated February 25, 1865.—In this invention a cylindrically formed shell is provided with a solid or heavy bottom, and an air chamber at its top, separated from the explosive charge by a loose diaphragm, for the purpose of retaining the shell or torpedo in a vertical position, and giving an upward direction to the exploding charge. A ball weight, supported by a removable pin, to which the operating cord is attached, is allowed to fall through a suitable tube within the shell, and thereby ignite a percussion priming, when it is desired to effect the explosion.

Claim.—First, a submarine shell or torpedo composed of a casing of any desired form and of any suitable material, so charged with explosive compound as to leave air space within the shell, for the purpose specified.

Second, the use within the shell of a yielding wad or diaphragm for separating the charge of the explosive compound from the air chamber, substantially as and for the purpose described.

Third, the employment, for igniting the charge, of a weight, so arranged within or adjacent to the said casing, and so combined with the retaining and releasing device herein described, or any equivalent to the same, that the said weight can be released at pleasure, and be permitted to fall on any substance ignitable by percussion.

No. 47,777.—LYSANDER WRIGHT, assignor to WRIGHT & SMITH, Newark, N. J.—*Scroll Sawing Machine.*—May 16, 1865.—This invention consists in a combination of the levers, between which the saw is hung. A spring over the upper lever, which tends to raise the saw, and a strap which is attached to the lower lever, passing between the two rollers, and attached at the other end to the periphery of a segmental wheel, upon an arm leading to a shaft, upon which are treadles by which motion is communicated to the saw.

Claim.—The arrangement of lever A, segmental wheel B, pulleys C C, strap D, levers G G, and hooks E′ E″, spring I, connected to lever G by link K, when operated by treadles J′ J″, substantially as described and for the purposes set forth.

No. 47,778.—P. M. A. LAURENT, St. Nazaire, France.—*Sextant.*—May 16, 1865.—This invention consists in devices for lengthening perpendicularly to the plane of the instrument, according to the requirements of the instruments, one or other, or even both of the direct or reflected images of the terrestrial objects or heavenly bodies, the distances of which are under measurement. This is done by means of an elongating glass, which is a converging or diverging cylindrical lens, placed normally upon the instrument, and perpendicular to the course of the luminous rays of the body to be elongated.

Claim.—First, elongating perpendicularly to the plane of the reflecting instrument the apparent image from one of the heavenly bodies, or objects from which may be measured the angular distance, in the manner set forth.

Second, the elongating lens or glasses, combined according to the above described conditions, and, in combination therewith, the above-described modification of the plane form of mirrors of reflecting instruments, as set forth.

No. 47,779.—NATHAN THOMPSON, Abbey Gardens, St. John's Wood, England.—*Stoppers for Jars and Bottles.*—May 16, 1865; patented in England January 4, 1865.—This invention consists of a stopper formed in two parts. The hook is secured to the lower part of the stopper, and has attached to it a lever bearing upon the inner part, by means of which the two parts are drawn together when the stopper is in the jar, and the rubber ring compressed and spread out so as to fit the mouth of the jar.

Claim.—First, constructing stoppers of an elastic ring, interposed between two parts, which are so combined with the lever that the parts may be moved to or from each other by the lever, as above described.

Second, forming the upper part of a stopper, so constructed, with a projecting ring of larger diameter than the mouth of the bottle or other article to which the stopper is to be applied.

Third, a recess in said top for the lever to lie in.

Fourth, connecting the lever to the lower part of the stopper by a hook, as above described.

No. 47,780.—JOHN D. MURPHY, Pottsville, Penn.—*Railroad Car Wheel.*—May 16, 1865.—The tread of the wheel and the spokes are made of wrought iron. The latter are riveted when hot to the former, and the hub is cast around flattened and expanded opposite ends of the spokes. The casting is effected by pouring a stream of melted metal over the ends of the spokes, and allowing it to pass freely away from them, until they have attained a high degree of heat. The mould is then allowed to fill, and the metals to unite with each other.

Claim.—First, constructing the rim, or tread, and the spokes of wrought iron, and attaching the same to each other before the hub is cast, by riveting the spokes when hot to the rim, and casting the hub around the flattened and expanded opposite ends of the spokes, substantially as set forth.

Second, pouring a stream of melted metal over the flattened and expanded ends of the spokes, and permitting it to pass freely away from them, until said expanded ends shall have attained to a high degree of heat, and then allowing the mould to fill and the metals to unite with each other, substantially as specified.

No. 47,781.—ALBERT ALDEN, New York, N. Y.—*Brush.*—May 23, 1865.—This invention consists in the use of notched, segmental plates or jaws, secured to the head of the brush, and operating in combination with the pivot connecting the brush handle to the head, and with a spring catch, in such a manner that by the action of the spring catch and notched plates, the handle can be brought into any desired inclination.

Claim.—The notched, segmental plates B, in combination with the head A, handle C, and with the pivot *a*, and spring catch *b*, all constructed and operating in the manner and for the purpose set forth.

No. 47,782.—GEORGE AMBROSE, New York, N. Y.—*Hoisting Apparatus.*—May 23, 1865.—This invention consists in an apparatus for elevating building material in the construction of houses, and is so arranged that the most laborious part of the operation can be performed by horse or steam power.

Claim.—First, a hoisting apparatus which employs an elevator C, adapted for receiving and holding in place hods, or other portable vessels, guideways A A, pulley rope *c*, pulleys *a b*, and drums *e f g*, together with a brake, all arranged and operating substantially as described.

Second, providing the elevator C with racks, which are adapted for receiving and retaining in place portable hods *s s*, substantially as described.

Third, spring latches *m m*, and levers *n n*, in combination with the guides A A, and elevator or hod rack C, substantially as described.

No. 47,783.—JOSEPH H. ASH, Brooklyn, N. Y.—*Kitchen Range Boiler.*—May 23, 1865.—This invention consists principally in providing a bottom and top of cast iron, having two flanges around the rim at right angles to the bottom, and forming a groove into which the cylinder, forming the sides or body of the boiler, is inserted and securely soldered.

Claim.—The improvement herein described in the manufacture of copper boilers, the same consisting in forming in each head of the boiler a suitable groove or channel, having parallel concentric walls perpendicular to the bottom extending entirely around the same, in which the body of the boiler is placed and soldered in any proper manner, substantially as above described and for the purposes specified.

No. 47,784.—ALBERT BALL, Worcester, Mass.—*Machine for Lubricating Bullets.*—May 23, 1865.—This invention is intended to expedite the filling of the grooves of Minie bullets with grease. The balls, placed in a suitable opening in a horizontal chamber or tube, are successively carried forward by a reciprocating plunger to a point beneath a cylinder containing the lubricating material, which is forced through a small orifice into and around the groove or grooves of the balls by means of a piston pressed down on the lubricating cylinder.

Claim.—First, the combination with the cylinder or proper receptacle for holding the bullet of an opening to admit the lubricating matter to the groove in the bullet, and a vent hole for the escape of the air, substantially as described.

Second, the combination with a cylinder or chamber for holding the bullet of a reservoir or reservoirs for holding the lubricating substance, and a plunger, or its equivalent, for forcing the lubricating matter while cool into the grooves in the bullet, substantially as set forth.

Third, the combination with the bullet cylinder C of the piston D and valve H, substantially as described.

Fourth, the construction and arrangement of mechanism in such a manner that bullets may be sized and their groove or grooves filled with a lubricating substance at one and the same operation.

No. 47,785.—SILAS D. BALDWIN, Chicago, Ill.—*Shears for Marking Cattle.*—May 23, 1865.—This invention consists in providing shears with several adjustable cutters inserted in the same blade. These cutters have conical edges, and cut into a slot beneath.

Claim.—First, the adjustable blade I, when provided with a conical-shaped edge so as to give it a shear cut.

Second, the slot *h* in the back of the blades I and J, in combination with the screw *b*.

Third, the combination of the conical-edged blade I, handles A and B, with the set screw or guard D, to regulate the width and depth of the incision.

Fourth, the plate F, provided with the projection G, and slots *c d* or *e*.

Fifth, the conical blade H in combination with the projection G.

Sixth, placing two or more shear blades on a single arm of a pair of shears.

Seventh, in combination with the cutting devices herein described, the adjustable blade or die J, in the manner and for the purpose set forth.

Eighth, the lubricating depository or cup C, when attached to the handle or arm of a pair of shears.

Ninth, the combination of the slotted plate F, blades I or H, spring E, and guard D, with the handles A and B.

No. 47,786.—JOHN A. BASSETT, Salem, Mass.—*Gas-burner.*—May 23, 1865.—This invention consists of a burner, with a single straight row of holes, in combination with a short adjustable chimney.

Claim.—A burner, for burning carburetted air or gas, having the parts arranged and constructed substantially as herein described and set forth.

No. 47,787.—HERMAN BERG, Union Hill, N. J.—*Gas-burner.*—May 23, 1865.—This invention consists in the combination of a chamber holding pulverized charcoal, &c., with an aperture and spring valve in a gas-burner.

Claim.—A gas burner, provided with a chamber *c* containing pulverized carbon or other absorbent material, and with a spring valve *g* closing up on an aperture *f* by the pressure of the gas, substantially as and for the purpose set forth.

No. 47,788.—ANDREW BLACK, New York, N. Y.—*Rendering Pan.*—May 23, 1865.—This invention consists of a pan set in a furnace, which is provided with two flues, the lower one communicating with the fireplace by means of apertures, which may be closed when desired by dampers. The pan is provided with a perforated false bottom, and in the space between the bottom and false bottom is arranged a rotary stirrer. Above the false bottom is a hollow rotary shaft provided with arms. The pan is provided with a light cover, to which are suspended two plates, the upper one being provided with gutters. The interior of the pan communicates with a condenser which is connected with a drain or sewer. The vapors as they pass through the condenser are condensed by means of cold water supplied by perforated boxes.

Claim.—First, the radial openings *a a*, sliding dampers *b b*, and split horizontal circular flues D E, the whole arranged in relation with each other, and with the fireplace and pan, substantially as herein described, for the purpose set forth.

Second, the combination of the perforated false bottom G and the rotary stirrer arranged between the said false bottom and the bottom proper of the pan, substantially as and for the purpose herein specified.

Third, providing a melting pan, with a cover N, having an outlet to a drain or sewer, but otherwise closed, substantially as herein described.

Fourth, the employment in combination with the cover of a melting pan having only an outlet to a drain or sewer, of a system of collecting plates R R, gutters *n n q*, or other equivalent surfaces, for the collection of condensed steam or other vapors eliminated from the melted fat contained in the said pan, and the conveyance of the same to the outlet of the cover, substantially as herein specified.

Fifth, in combination with the cover of a melting pan having only an outlet to a drain or sewer, a condenser arranged between the said outlet and the drain or sewer, substantially as and for the purpose herein set forth.

No. 47,789.—CHARLES D. BLINN, Port Hudson, Mich.—*Bed-bottom.*—May 23, 1865.—This invention consists in a peculiar construction of a spring bed-bottom, the elasticity of which is produced altogether by wooden slats connected to each other and to the bedstead in such a way that the frame of the bed-bottom is affected by pressure on any part of it, and its different parts are made to bear a share of the load.

Claim.—The bed bottom above set forth, constructed substantially as herein described.

No. 47,790.—CHARLES T. BOARDMAN, Pawtucket, R. I.—*Steam Boiler.*—May 23, 1865.—This invention consists of two cylindrical boilers arranged side by side, and one inclined tubular boiler arranged below the near portions of the cylindrical boilers. The object of this arrangement is to provide for the collecting and retaining of the sediment contained in the water in the coolest portion of the generating apparatus. It further consists in the arrangement of an air duct and mixing chamber for the admission of air from the ash pit to mix with the gases of combustion, these arrangements being peculiar to this boiler.

Claim.—First, the arrangement of the two cylindrical boilers A A, the tubular boiler B, and the laterally inclined connecting water legs C C, substantially as and for the purpose herein specified.

Second, in combination with the two cylindrical boilers A A, tubular boiler B, and walls D D of their setting, the pier E, and connected parallel upright walls F, arranged substantially as herein described.

Third, the gas and air-mixing chamber H, bridge wall I, and air duct or ducts *b*, in combination with each other and with the bridge wall J, pier E, and ash pit 4, substantially as herein set forth.

Fourth, the combination of the boilers A A B, fireplace G, mixing chamber H, side flues *d d*, and return flue *g*, the whole arranged substantially as and for the purpose herein specified.

No. 47,791.—JOSEPH N. B. BOND, New York, N. Y.—*Automatic Boiler Feeder.*—May 23, 1865.—The object of this invention is to so regulate the ingress of water to the boiler that the exact quantity requisite shall at all times be admitted, irrespective of the pressure of steam or the action of the engine. Its novelty consists in the combination and arrangement of the expansible pipe with the tank and boiler.

Claim.—The expansible pipe B, arranged in combination with the tank E and boiler A, substantially in the manner and for the purpose set forth.

No. 47,792.—GEORGE B. BRAYTON, Boston, Mass.—*Steam Engine.*—May 23, 1865.—This invention consists in providing a valve constructed in the ordinary form, except that it has ports entering it from its ends, which ports are supplied with separate and auxiliary valves which are controlled by the action of the governor, and perform the function of cut-off valves. This improvement is adapted to an oscillating engine, and the main valve is operated from a rock shaft running directly through the steam-chest, which shaft has an arm on its outer end and which is held in a fixed standard, and the motion is produced in the valve as a consequence of the oscillation of the cylinder. The oscillation of the cylinder also brings the arms of a rocker shaft, to which the cut-off valves are connected, in contact with an expansible cam attached to the governor, and by which their motions are controlled.

Claim.—First, the variable and self-adjusting cut-off, arranged and operated by the governor as described, for equalizing and rendering uniform the action of steam-engines.

Second, the combination with the ordinary slide or D-valve of auxiliary steam ports and slide valves, under the arrangement and for operation in the manner substantially as set forth.

Third, the method herein described of connecting the oscillating arm with the slide or D-valve, affording yielding connection so as to admit of the valve reciprocating along the plane surface of, and in contact with, the valve face.

Fourth, the method herein described of operating the auxiliary valves, hung upon the end of an inlet balance beam by means of a rocking lever, yet so as to admit of traverse motion of the balance beam, together with the main valve, substantially as shown and described.

Fifth, regulating the action of the auxiliary or cut-off valves by means of the cam, ex pansible by the action of the governor, substantially as set forth.

No. 47,793.—ABEL BREAR, Saugatuck, Conn.—*Oil Ejector.*—May 23, 1865.—This inven tion consists in combining with the pipes, which convey the air to and the oil from the well, a nozzle, having an annular space around it for the reception of the air, and a passage on one side of the same for guiding the air into the central or oil ejecting tube. This nozzle also has an aperture through the bottom for the admission of the oil, and this aperture extends around the nozzle with the exception of the space occupied by the air-induction passage. The air used is forced down to the instrument through the outer pipe which sur-rounds the oil pipe, and all heat created by compressing the air, or by the use of steam, is made available for preventing the oil from congealing in the eduction pipe.

Claim.—In combination with my arrangement of the oil or discharge tube and the blast tube of an ejector, the lower socket A constructed with a central passage *a* right through it, and with an annular cavity by surrounding the said passage and communicating with the nozzle *c*, arranged within the said passage, substantially as and for the purpose herein specified.

No. 47,794.—JACOB BUZBY, Philadelphia, Penn.—*Preventing and Removing Scale in Steam Boilers.*—May 23, 1865.—This invention consists in using a solution of gambar to remove the scale in steam boilers; by keeping such a solution in the boiler constantly the formation of new scale is prevented.

Claim.—The use of gambar for removing scale from steam boilers as described.

No. 47,795.—WILLIAM CANNING, New York, N. Y.—*Evaporator.*—May 23, 1865.—This invention consists of a semicircular trough surrounded by a steam jacket. and provided with a series of rotary disks attached to a hollow shaft, closed at one end and opened at the other. The liquid to be evaporated is placed in the trough, and steam is let into the jacket; the shaft is caused to revolve, and at the same time a current is made to circulate over the sur-faces of these disks and through the hollow shaft, in order to carry off the moisture from the liquid adhering to the disks.

Claim.—First, the construction of the rotating disk or disks of a rotary evaporator of a conical or dishing form, substantially as and for the purpose herein specified.

Second, the arrangement of such disks in such manner that they overlap each other upon a hollow central shaft, in which there are openings between the said disks, substantially as and for the purpose herein set forth.

No. 47,796.—STEPHEN D. CARPENTER, Madison, Wis.—*Ship Defensive Armor.*—May 23, 1865.—This invention consists principally in the facing of the armor by the use of perforated plates, with dovetail corrugations, the plates being chilled to harden them. This, and a special arrangement of staples and bolts, constitute the invention.

Claim.—The wrought-iron or steel perforated plates, with dovetail corrugations and the chilled cast-iron facing and backing, with the attached staples, all for the purposes and sub-stantially in the manner herein described.

No. 47,797.—P. G. CHASE, Berlin, Wis.—*Bed Bottom.*—May 23, 1865.—This invention consists of a series of slats in a camber or bow form, with tension springs beneath them, to aid in returning them to the bow form after being relieved from depression.

Claim.—The improved spring-slat for bed bottoms or analogous purposes, consisting of a camber slat B, in combination with the spring tension rod D connected to the slat at or near its ends, for the purpose of increasing its power of resisting depression, substantially as described.

No. 47,798.—ANNING S. CHITTENDEN, Bergen county, N. J.—*Identifying Ticket for Railroads, &c.*—May 23, 1865.—In this invention a photograph of the holder of the ticket, with other necessary description, rules, &c., is enclosed in a convenient form for carrying in the pocket.

Claim.—The combination of the several parts herein described to form an identifying rail-road or other ticket, substantially as herein set forth and for the purposes described.

No. 47,799.—JOHN M. CLARK, Dayton, Ohio.—*Broom.*—May 23, 1865.—This invention consists in the construction of a wrapper of flexible or yielding material, which serves to wrap and firmly secure in place the broom corn, and at the same time affords means for retaining the handle without the aid of a socket; also in the use of two or more ribs, by means of which the wrapper may be compressed so as to retain the broom corn in proper form.

Claim.—The thin, elastic and yielding wrapper represented in Figure 1, constructed and applied to the brush and handle of a broom, in combination with the ribs *e e*, in the manner substantially as, and for the purpose described.

No. 47,800.—F. F. CORNELL, jr., New York, N. Y.—*Baling Press.*—May 23, 1865.—The novel feature in this invention is the travelling sides of the follower, which make a tight press box.

Claim.—First, the formation of a close chamber in the press by means of the travelling sides of the chamber, substantially as described.

Second, the side slip N, in combination with the travelling sides of the press, for facilitating the removal of the finished bale from the press, substantially as described.

No. 47,801.—SOMMERS CROWELL, Philadelphia, Penn.—*Iron Railing for Fence.*—May 23, 1865.—This invention consists in casting the palings with recesses on each side, having the open side of the recesses on one side of the palings alternating with those on the other side, thereby forming openings without the use of cores, for the reception of the horizontal bars.

Claim.—Constructing the palings B, with the recesses C on each side, having the open side of the recesses on one side of the palings alternating with those on the other side, thereby forming openings, without the use of cores, for the reception of the horizontal bars A, substantially in the manner hereinbefore described.

No. 47,802.—EPHRAIM CULVER, Shelburne, Mass.—*Washing Machine.*—May 23, 1865.—This invention consists of a chest, divided, by means of slotted boards, into three compartments. A beater, perforated with holes, is arranged to slide back and forth in the middle compartment. The fabrics to be cleaned are placed in the middle compartment with the beater, and as they are moved to and fro by the beater, jets of water are thrown upon them through the perforations of the compartments.

Claim.—The combination and arrangement of chest O and lid B, with perforated division boards *c c*, and beater D, and wheels E E E E, and lever *i*, and connecting rod *h*, operating in the manner and substantially as above set forth, for the purpose specified.

No. 47,803.—JOHN A. CURRAN, United States army.—*Percussion Fuze for Explosive Shell.*—May 23, 1865.—In this invention a spring bolt is held by a detent in the base of the shell, which detent is released on impact by the action of a pendulous plunger. The bolt goes forward and strikes a cap on a nipple, near the base of the chamber.

Claim.—The combination of the plunger *h*, spring *i*, detent spring *j*, weight *k*, and arm *o*, when constructed and arranged to operate as and for the purposes herein specified.

No. 47,804.—HENRY H. DANIELS, Philadelphia, Penn.—*Boring Tools for Artesian Wells* —May 23, 1865.—This invention consists of certain plates, levers, and a guided bar, the whole constructed and arranged for joint action, and forming an instrument whereby detached boring tools or implements jammed in artesian wells may be withdrawn therefrom. The invention further consists of a modification of the said instruments to be used for withdrawing pipes from wells.

Claim.—First, the instrument composed of the plates A and A′, levers B and B′, and guided bar D, with its projections *i i*, the whole being constructed and arranged in the manner and for the purpose herein described, and illustrated in Figs. 1, 2, and 3.

Second, the modified instrument composed of the plates A and A′, levers B and B′, guided bar D, with its pins *g g*, or their equivalents, the whole being arranged and operating substantially as and for the purpose herein set forth.

No. 47,805.—JULIUS C. DICKEY, Saratoga Springs, N. Y.—*Rock Drill.*—May 23, 1865.—This invention consists in making a rock drill for artesian wells of circular form, with a circular cutting edge of steel, or its equivalent.

Claim.—The drill A, with a circular cutting edge, in combination with the recess C, for the purposes set forth.

No. 47,806.—CHARLES DISSTON, Philadelphia, Penn.—*Saw-setting Machine.*—May 23, 1865.—This invention consists in an arrangement of machinery whereby the saw can be made to receive part of the set required by a tooth, at the first blow of the hammer, after which a continuation of the machine lowers the back of the saw and increases the angle thereof with the face of the hammer at the second blow, which finishes the set. It also consists in a peculiar arrangement of devices whereby the saw is fed along upon the anvil.

Claim.—First, in combination with the hammer and anvil of a saw-setting machine, the automatic mechanism herein described, or the equivalent to the same, for supporting the back edge of the saw and elevating and lowering the same, in the manner and for the purpose specified.

Second, the feed lever O, in combination with the cam H and spring *g*, or their equivalents, whereby the within described movement is imparted to the said lever, for the purpose specified.

Third, the ledge or projection *d* and plate *e*, arranged in respect to the anvil, as set forth, for the purpose described.

No. 47,807.—JOHN A. DODGE, Auburn, N. Y.—*Harvester.*—May 23, 1865.—This invention consists in the form and construction of the main frame, the arrangement of the gearing and shafts, the construction of the stirrup, which connects the finger beam with the main frame, and the particular arrangement of means for keeping the reel belt taut.

Claim.—First, the main frame A, when cast in one single piece, in the form and manner described.

Second, in combination with the main frame A′, as described, the arms B and C projecting from the front and rear inner corners, for the purpose described and set forth.

Third, in combination with the frame A, the combination and arrangement of the wheels *e* and *f*, the geared wheels *g* and *h*, and the shafts *c* and *d*, when the shaft *c* is placed beneath the shaft *d*, for the purpose of placing the pitman wrist as nearly in line with the cutter bar as possible.

Fourth, in combination with the arm C and the pulleys J and *a*, the lever H, situated and operating as described.

Fifth, in combination with the main frame of a harvesting machine and the lifting bar *b*, the stirrup L, as described and set forth.

Sixth, the self-adjusting pulleys pivoted at the foot of the reel post, substantially as and for the purpose set forth.

No. 47,808.—M. B. Dodge. New York, N. Y.—*Apparatus for Grinding and Amalgamating Ores.*—May 23, 1865.—This invention consists in an improved method of attaching the shoes to the muller. The shoes are provided with a projection which extends up through slots in the plate and between lugs in the upper side of said plate. These projections have pins passing through them, by means of which they are secured to the plate. The shoes are provided with guide pins which work in holes in order to keep them in position.

Claim.—The attaching of the shoes to the muller by pivots, or in such a manner that they will work or adjust themselves from a centre or from a hinged or pivoted point with or without springs, substantially as set forth.

No. 47,809.—William H. Elliot, Plattsburg, N. Y.—*Breech-loading Fire-arm.*—May 23, 1865.—In this invention a rolling or oscillating breech piece has a brace so pivoted to it as to resist the recoil of discharge, while it allows the hammer to be cocked only when thus securely locked in position, and when the hammer is cocked the brace is in like manner prevented from being released. When the brace is tilted and the hammer drawn back with the swinging breech, the trigger is thrown out of action. The main spring is pivoted to the swinging breech.

Claim.—First, the combination of a hammer *d* with a swinging breech plate *c* and a brace *e*, when these devices are pivoted together, substantially as described.

Second, attaching the main spring *k* to swinging breech plate *c* by means of a pivot *u*, substantially as and for the purpose herein specified.

Third, so arranging the attachments of a main spring to a hammer and to a swinging breech plate that the power of the main spring shall tend to throw the breech plate forward when the chamber is closed, and to throw it back when the chamber is open, substantially as herein shown.

Fourth, operating upon the point of the trigger to prevent it from catching into the full cock notch by means of cam S, when both the breech plate and hammer are thrown back together as herein described.

Fifth, so constructing and operating the hammer and brace in combination with a swinging breech plate that said hammer and brace cannot both be moved at the same time, substantially as and for the purpose herein set forth.

No. 47,810.—John Fox, Philadelphia, Penn.—*Composition for Lining Petroleum Barrels.*—May 23, 1865.—This invention consists of a composition of three parts of potash, one part of sulphur, one part of common salt, two parts of hydraulic cement, and three parts of water.

Claim.—The composition made substantially as above described, for sealing barrels and other vessels set forth.

No. 47,811.—George H. Fuller, Pawtucket, R. I.—*Manufacturing Watch Keys.*—May 23, 1865.—This invention consists in making the pipe part of a small piece of sheet metal bent into a cylindrical shape. A short piece of wire is then inserted in one end of the cylinder, leaving enough projecting therefrom to form a shank for the pipe; and in the other end of said cylinder is a square punch or mandrel of the proper size. The cylinder is then put into a die and swaged into the shape desired, and the punch withdrawn.

Claim.—Making a winding key or key pipe in the manner and on the principle substantially as herein described.

No. 47,812.—William W. Grier and Robert H. Boyd, Hutton, Penn.—*Drill Bit.*—May 23, 1865.—This invention consists in making the cutting edges of the drill of the ordinary shape, and afterwards serrating them, giving said cutting edges the appearance of rows of saw teeth.

Claim.—A drill or bit having the notch or recess at its central point, as above described, in combination with the serrated cutting lips *a′ a′*, substantially as shown and described.

No. 47,813.—Benjamin Griffin, Lawrence, Mass.—*Sheep Rack.*—May 23, 1865.—This invention consists in providing a sheep rack with covers in combination with swinging side and trap doors.

Claim.—The covers C, the swing doors E, and the trap doors H, for the purposes herein set forth.

No. 47,814.—Martin R. Griswold, Watertown, Conn.—*Machine for Making Tobacco Pipes.*—May 23, 1865.—This invention consists in a spindle on which are dogs to hold the pipe from turning when placed thereon, and attached to an oscillating frame which turns partially over, a wheel attached to the spindle is thrown in gear with another in motion and revolves the spindle, and thus presents the body of the pipe to revolving cutters which cut and dress the body of the pipe to its required size and shape. And it also consists in a carrier so constructed that by placing the unfinished pipes thereon it feeds them to the spindle, there to be fed up to the cutters by the oscillating frame.

Claim.—First, the combination of the spindle E, constructed and operating substantially as described, with the cutter B, as and for the purpose specified.

Second, the carrier L, constructed and operating substantially as described with the spindle E, combined as and for the purpose specified.

No. 47,815.—Albert Hall, New York, N. Y.—*Toy Spring Gun.*—May 23, 1865.—This invention consists of a device for throwing torpedos by means of an India-rubber strap or loop.

Claim.—The receiver E, spring C, and trigger D, constructed and arranged and combined with each other and with the slatted barrel B, substantially as herein specified.

No. 47,816.—Samuel Hall, New York, N. Y.—*Blind Fastening.*—May 23, 1865.—This invention consists, first, in attaching to the blind by a pivot a metal plate having upon its outer end an eye or socket so arranged that it will surround the pintle and female part of the hinge; in the lower edge or socket are notches cut at the proper place, so that when the blind is swung out the notches will drop down and grasp upon the upper edge of that part of the hinge which supports the pintle and holds the blind fast; and second, of a hasp for fastening the blind when shut, which consists of an ordinary plate hinged at one end to the blind, and having a hole in the other, which drops over a pin in the window frame; a hook pivoted upon the window frame hooks around the pin above the plate, and the other end of the hook passes under the sash, which holds it from unlocking.

Claim.—The fastener *a*, constructed substantially as described, for the purpose specified.

Also, in combination with the window sash B, the hasp lock or its equivalent, constructed substantially as and for the purpose specified.

No. 47,817.—William Hall, Brookline, Mass.—*Lock.*—May 23, 1865.—In this lock the stub of the bolt is in two parts; that next to the tumblers being so attached to the bolt as to permit to the latter a slight longitudinal movement which will cause the other part of the stub to be deflected laterally and catch into a notch in the edge of an adjacent fixed plate. Another improvement is a device for throwing the cogged and gated tumblers out of gear with the cog wheels upon the knob spindle to permit of a new combination, which consists in attaching the former to a movable plate, and, when the tumblers are properly arranged, sliding said plate laterally by means of a key, by which the stubs are caused to enter the gates. In addition to this the key, while moving the plate and tumblers, lifts up the end of a lever, which, entering a notch in the edge of the bolt, prevents the latter from being retracted and the tumblers from being displaced, while a new combination is being effected.

Claim.—First, fastening the hub by means of the right-hand screw H′ through the case of the lock, and the left-hand screw H″, or vice versa, combined with the check nut *v*.

Second, making the stump in two parts, S and S′.

Third, the peculiar arrangement of the lever L and the key T, so that at the time the cog-wheels are thrown out of gear the bolt shall be immovable.

Fourth, the hollow adjusting screws *g*, *g′ g″*, *g‴*, all of which operate substantially as described, and for the purpose set forth.

No. 47,818.—James H. Hanchett, Beloit, Wis.—*Pulverizing Tailing from Gold Washers.*—May 23, 1865.—This invention consists in a driving pinion and shaft, to which is rigidly attached the upper grinding surface, and it revolves with the shaft; the lower grinding surface, which revolves upon the lower part of shaft, has an axis, but by the interposition of pinions it revolves in an opposite direction to the upper grinding surface, by means of which the effective space of the grinding surfaces is double what it would be if only one surface moved.

Claim.—First, the grinding disk C, constructed as shown, and provided with the shaft B, having the feather *b* thereon, as and for the purpose set forth.

Second, the grinding disk D, provided with the internally geared flange *d*, constructed and operating as and for the purpose herein set forth.

Third, in combination with the disks C and D and shaft B, the gear wheels F and E E E, when all the parts are arranged to operate as and for the purpose herein set forth.

No. 47,819.—HERMAN HAUPT, Cambridge, Mass.—*Drilling and Boring Machine.*—May 23, 1865.—This invention consists of a cylinder, containing a piston, whose rod projects through both heads, and carries internally or externally one or more drill bars. With the cylinder is combined as usual a valve chamber and valves preferably balanced to equilibrate pressure, and operated automatically by connection with the piston rod. Around each drill bar (and in the rear of the cylinder and back of the piston rod if it be hollow, and if the drill bar passes through the piston rod) is arranged a mechanism which is called a gripper box, to firmly grasp and hold said bar during its receding movement, while during part of the advance of the piston, and when at or about the end of the stroke, to release the same, thereby allow of its self-adjustment in accordance with the penetrability of the rock. Rotary motion is imparted to the drill rod at each stroke of the piston by means of a stud operating in a helical or oblique slot in the casing of the gripper box, or by any other equivalent arrangement.

Claim.—First, the employment in machinery for drilling or boring rocks or other hard substances, operated by steam or other elastic fluid, of a momentum feed, as described, *i. e.*, a mechanism to firmly connect the piston rod with the drilling tool or tool holder in such a manner as that the hold shall be suddenly and automatically released at or before the completion of its forward stroke, to allow of the self-adjustment of the tool in relation to the rock, in accordance with the penetrability and the progress of the work, substantially in the manner set forth.

Second, in steam drills, or drills operated by air or other elastic fluid, the combination with a hollow piston rod, when used as a tool holder, of a gripper box, arranged in the rear of the cylinder and back of the piston rod, substantially as set forth.

Third, in a drill, operated by steam or other elastic fluid, the momentum feed, as described, when applied to the translatory movement in combination with a positive rotary feed of the drilling tool, and whether the two feeds are simultaneous, reciprocating, or intermittent in their action with respect to each other, substantially as set forth.

Fourth, the arrangement concentrically with the drill or tool of the gripper box, containing a series of wedges held in place to firmly grasp the tool through the agency of a spring, in combination with a stationary anvil ring forward of the gripper box, for operation as set forth.

Fifth, in combination with the gripper box, operating as described, the arrangement for driving the wedges home against the tool, to grasp the same with the full head of steam or the actuating power by causing the rear end of the hollow piston rod to butt against the heads of the wedges, as described.

Sixth, in combination with the gripper box, constructed and arranged as described, the follower to expand the wedges for the purpose of releasing the drill tool or tool holder, substantially as set forth.

Seventh, recessing the stationary cheek or anvil ring so as to leave projecting studs corresponding to similar studs in the forward end of the gripping box, in such manner as that the momentum feed shall be alternated by blows under full head of steam, substantially as set forth.

Eighth, in combination with the means described for producing rotary motion of the tool, the auxiliary ratchet and dog, or the mechanical equivalent thereof, for the purpose of preventing the tool from turning back after each rotation, substantially as set forth.

No. 47,820.—WELLS HENDERSHOTT, Batavia, N. Y.—*Railroad Chair and Coupling.*—May 23, 1865.—This chair consists of a base plate with square flanges. In the centre of and upon this plate meet and rest the ends of two rails. Between one flange of the plate and the rail on each side is a splice piece breaking joints with the ends of the rails. Through said base plate and splice pieces, and also through long slots in the flanges of each side of the rails, pass bolts, connecting them with the cross-ties.

Claim.—Making a rail chair and coupling with a base plate *g g* with square flanges *f f* for the side pieces to rest against, with side or splice pieces *b b* having squared shoulders *h h*, said splices and base being bolted or spiked to the cross-tie through long slots in the flanges of each side of the rail or bolts, may be secured by a key, all constructed substantially as described and for the purpose herein set forth.

No. 47,821.—B. B. HILL, Chicopee, Mass.—*Embossing and Seal Press.*—May 23, 1865.—This invention consists of a fly between the bed and die, so as to allow the parts of envelopes, &c., beneath the flap to be protected from the impression.

Claim.—The employment of the fly *h*, arranged between the die *n* and bed *a*, substantially as and for the purpose described.

No. 47,822.—J. S. HOARD and C. M. MILES, Vineland, N. J.—*Fruit Basket.*—May 23, 1865.—This invention consists of a fruit basket composed of any suitable thin material, such as paper, bark, or veneers of wood, the body of which is made by interlocking the two edges which come together when the material is bent to a conical or circular form, the bottom being made by dropping a circular piece of suitable size down into the basket.

Claim.—The above-described berry and fruit basket, constructed as above set forth, as a new article of manufacture.

No. 47,823.—JULIUS HOEFER, New York, N. Y.—*Apparatus for Cooling Beer.*—May 23, 1865.—This invention consists of a frame supporting two tanks, one containing beer and the other containing water. A hollow gutter extends from the tanks to the bottom of the frame. The beer is allowed to flow into the gutter at the top, and the water is caused to circulate in the hollow space from the bottom to the top, where it escapes through a pipe.

Claim.—Cooling beer or other liquids by causing the same to flow downward in the open hollow of the metal pipe E, and by causing the cold water to rise upward in the enclosed space of said pipe E, substantially in the manner and for the purpose described.

No. 47,824.—MARTIN HORTON, Brooklyn, N. Y.—*Carpenters' Gauge.*—May 23, 1865.—This gauge is provided with a stationary brad of ordinary construction on one side, and a movable slide, provided with a bead, on the opposite side of its shank, in such a manner that the gauge can be readily set for measuring the width and thickness of a board at the same time. The head is adjustable by means of a wedge, which can be readily fastened and unfastened. An additional adjustable brad on that side of the shank which contains the slide acts in combination with the brad in said slide, as a mortise gauge.

Claim.—The adjustable brad *f* in combination with the brad *d* in the slide *c*, arranged and operating substantially as and for the purpose described.

No. 47,825.—BENONI H. HOWELL, New York, N. Y.—*Composition for Lining Barrels.*—May 23, 1865.—This invention consists of a composition of six parts liquid glass and one part of pulverized charcoal.

Claim.—The composition specified, for lining barrels for petroleum, &c.

No. 47,826.—GEO. WOLSEY HUBBELL, Derby, Conn.—*Apparatus for Japanning.*—May 23, 1865.—This invention consists of two boxes attached to oscillating bars in such a manner that their positions may be changed alternately. The boxes are filled with the articles to be japanned, and the japanning fluid poured in one of the boxes; the fluid is then allowed to flow into the other box, through a flexible tube, without disturbing the articles in the first box.

Claim.—The plan of drawing off or removing the liquid japan from the articles japanned, keeping said articles stationary, whether this is effected by means of the mechanism hereinbefore described, or by means of a pump, syphon, or any mechanical process whereby the liquid japan is removed from said articles, leaving them stationary.

No. 47,827.—R. B. HUGUNIN, Cleveland, Ohio.—*Device for Covering Rollers for Wringers.*—May 23, 1865.—This invention consists of two clamp plates hinged on their under sides. Above the hinged parts each plate is semi-cylindrical in shape. The clamping plates having been opened to their fullest extent, the sheet to be used as a covering is inserted between them, its sides resting upon projections on the clamping plates. The edges of the sheet having been firmly clasped by screw blades on the inner sides of the clamping plates, the roller to be covered is laid upon the sheet and the clamping plates are then closed, the roller and its enveloping sheet being forced down into the semi-cylindrical projections before mentioned, where the sheet is completely wrapped around the roller and may be secured.

Claim.—The clamp plates A A, moving or folding blades B B, and projections C C, substantially as and for the purposes specified.

No. 47,828.—ANDREW HUNTER, Solano county, Cal.—*Apparatus for Separating and Concentrating Ores.*—May 23, 1865.—In this invention two troughs are in the form, and suspended as the common stroke-table, so that they may be vibrated by the crank, and with a jerking motion, by means of the spring; across the tables are troughs to receive the ore pulp and distribute it by means of a perforated bottom; also smaller troughs which receive water to be distributed in like manner. The form of the top of the tables, which are amalgamated, is first inclined, then horizontal, and then again inclined.

Claim.—The formation of the troughs B B, with metallic bottom, alternately inclining and level, as shown by line *a b c d*, substantially as described, and for the uses and purposes set forth.

Also, the combination of these troughs with the troughs E E G G, stop-cock H, hangers D D′, spring S S, or their equivalent, by adjustable connecting rods I, giving an oscillating and vibrating motion, all substantially as hereinbefore set forth.

No. 47,829.—EDWARD E. KILBOURN, New Brunswick, N. J.—*Knitting Machine.*—May 23, 1865; patented in France January 6, 1864.—This invention is designed as an improvement on Kilbourn's machine, patented April 9, 1861. It consists of a straight frame, and knits sheets of fabrics so shaped, and with selvage edges, as to be ready to be sewed up into the form of stockings. The knitting commences at the top of the leg, the fabric being made of uniform width for a given distance; it is then automatically narrowed for the ankle by withdrawing some of the needles and transferring their stitches to adjacent needles; the knitting proceeds again uniformly of this reduced width until reaching the heel part, when the central knitting is suspended, and side strips only are simultaneously knitted for the

purpose of forming the heel, after which the knitting of the central part is resumed to form the upper part of the foot and toe; the sole piece being next formed by taking from the needles the two heel strips and placing them together, and again knitting towards the toe; the requisite narrowing being effected at the proper stages. The edges not thus united in the machine are sewed together by hand; namely, the seam up the back, and the sides of the foot piece.

Claim.—First, the combination of the carriage of a travelling needle in a knitting machine, with the mechanism for moving it past the other needles of the machine in such manner that it can be readily disengaged from said mechanism and re-engaged therewith, substantially as set forth.

Second, the combination of the instrumentality through which the pattern mechanism operates upon the travelling needle, or upon the instrumentalities for withdrawing or replacing the regular needles, with the carriage of said needle, or of said instrumentalities, substantially as set forth.

Third, the arrangement of the movable cam plates in a knitting machine above the devices which they operate upon, substantially as set forth.

Fourth, the arrangement of the pattern mechanism of a knitting machine above the needle carriage, substantially as set forth.

Fifth, the combination of the pattern barrel of a knitting machine with mechanism for changing its relationship to the device upon which its pins operate, substantially as set forth.

Sixth, the arrangement of the pins of a pattern barrel in two helical lines, commencing at the opposite ends of the barrels, substantially as set forth.

Seventh, the combination of a cam for restoring the withdrawn needle with a carriage, substantially as set forth.

Eighth, a needle bed divided into divisions, which are so combined with the machine that a division may be displaced and replaced, substantially as set forth.

Ninth, the combination of a removable division of the needle bed, with instrumentalities for counterbalancing its weight, substantially as set forth.

Tenth, the combination of a removable division of the needle bed with a needle holder, substantially as set forth.

Eleventh, the combination of a travelling needle with a needle bed, divided into divisions, one of which may be displaced and replaced, substantially as set forth.

Twelfth, the combination of a transferring prong with a needle bed divided into divisions, one of which may be displaced, substantially as set forth.

Thirteenth, the combination of a removable division of the needle bed with its support by devices which permit a transverse movement, substantially as set forth.

Fourteenth, the combination of a series of reciprocating needles with two thread guides, one of which can be thrown out of gear when a single strip of work is being knit, the whole operating substantially as set forth.

Fifteenth, the combination of the thread-guide carriage with catches that connect and disconnect it with the mechanism for imparting motion to it, substantially as set forth.

Sixteenth, the combination of the needle carriage with two sets of bumpers for operating two thread guides, substantially as set forth.

Seventeenth, the combination of the sinkers at the inner side of a division of the needle bed, which remains in place, with a lifter, substantially as set forth.

Eighteenth, the depression of the yarn between the thread guide and the last needle fed with yarn, by an instrumentality which is separate from the thread guide, and effects the depression substantially as set forth.

Nineteenth, the combination of the thread-guide carriage with devices for gripping the yarn which are independent of the thread guide.

Twentieth, the combination of the needle-cam bar with a movable cam block operating to withdraw one of the needles to a less extent than the others, substantially as set forth.

Twenty-first, the combination of the under supports of the needles of a knitting machine with devices which permit their adjustment laterally, as set forth.

Twenty-second, the combination of the stocks of the under supports with a rock shaft, substantially as set forth.

No. 47,830.—D. W. HUNT, San Francisco, Cal.—*Horse Power.*—May 23, 1865.—This invention relates to a means employed for regulating the speed of the horse power, whereby a steady and uniform motion of the same is obtained. This speed-regulating mechanism consists of a ball governor combined with a brake, the latter being arranged to operate against the fly wheel of the machine. It also consists in the use of an endless platform, whereby the same is rendered rigid or inflexible in one direction, and at the same time rendered flexible in the other or opposite direction, and a brake attachment for stopping the machine in case the belt of the same should break.

Claim.—First, the ball governor J, in combination with the toggle M and shoe O, the latter being attached to a swinging bar N, or its equivalent, and placed in relation with the balance wheel E, all being arranged and applied to a horse power, substantially as and for the purpose herein set forth.

Second the endless platform D, provided with chains P P, constructed of cast-iron links *j*, having longitudinal grooves *k* to receive plates *l*, which are attached to the links by rivets *m*, substantially as herein set forth.

Third, the brake or stop attachment, composed of a pulley Q bearing on the belt H and attached to the lever R, in combination with the shoe S interposed between the short arm *u* of said lever and the pulley G, to operate in the manner substantially as and for the purpose herein set forth.

Fourth, the cams *w w* on the shaft V in the supplemental frame T, in connection with the pawl W and the perforated wheel V′ or its equivalent, for adjusting the inclination of the frame A and endless platform D, substantially as described.

Fifth, hanging the frame A in the supplemental frame T by means of journals *b′ b′* attached to the sides of the frame A underneath and in line with the balance-wheel shaft B″, substantially as and for the purpose herein set forth.

No. 47,831.—Sarah J. A. Hussey, Cornwall, N. Y.—*Table for Hospitals.*—May 23, 1865.—This invention consists of two upright standards, with a cross-board for a seat, provided with foot rests; above the seat is another cross-board for a table, suitably located, and above the table is a head rest for the support of the sitter's head when leaning it forward. The table is provided with a drawer and swinging shelf. The head-rest, table, and seat are adjustable at different elevations by means of pins fitting in holes in the standards.

Claim.—The above described adjustable table, in combination with the head rest, substantially as set forth.

Also, the foot rest and drawer book-holder, in combination with the table, as specified.

No. 47,832.—George W. Hyatt, Auburn, N. Y.—*Shears for Cutting Iron Bolts.*—May 23, 1865.—This invention consists of a pair of shear bars, pivoted to a cross-bar, at their cutting end; at the other ends are duplicated levers to give power, and their operation is such that in the act of cutting off the rod, one of the cutters will have a shearing movement crosswise of the rod.

Claim.—The shear bars B B, pivoted to the bar A, as shown, for the purpose already described.

No. 47,833.—Jacob B. Hyzer, Janesville, Wis.—*Stove Pipe Drums.*—May 23, 1865.—In this invention, an outer and inner cylinder form a chamber in which are vertical plates extending part way up, and in which are apertures; between the inner cylinder and smoke-pipe is an air-chamber, partly open at bottom, and wholly at the top. A damper in the smoke-pipe, and near the bottom of the drum, directs the flow of smoke into an opening communicating with the outer chamber, and here the flow is so directed by the flanges as to circulate over and round the drum, down to an aperture just above the damper, on inside of the pipe; the open damper allows a direct circulation.

Claim.—First, a heat radiator, when constructed and arranged substantially as herein described and set forth.

Second, the combination of ascending and descending flues and an inner hot-air space with a straight flue regulated by a single damper, substantially as described.

Third, constructing the radial plates with a series of orifices or holes, substantially as and for the purpose set forth.

No. 47,834.—Charles G. Imlay.—Philadelphia, Penn.—*Fruit Jar.*—May 23, 1865; antedated December 6, 1864.—This invention consists of a glass stopper provided with an aperture in its centre, which is closed by a plug. The joint between the stopper and the jar is rendered air-tight by means of a rubber gasket, the stopper being held tight against it by a screw cap, which fits into screw threads upon the neck of the jar.

Claim.—First, the use of the metal screw cap *c*, for the purpose of locking any form or variety of glass stopper upon a glass jar, as described.

Second, the glass stopper and cap *v j*, when fastened by screw thread to the jar, in the manner described.

Third, a metal cap, whereby inclined slots in the cap and by projections or lugs, or portions of screw thread in the neck of the jar, it locks a glass stopper to a glass jar, and the same when no glass stopper is used.

Fourth, the use of the hollow tube plug *v k*, and plug *v x*, (with two apertures at its base,) for locking the aperture inside of the jar, as described.

Fifth, all and each of the described and figured stoppers, when used in combination with my locking caps.

No. 47,835.—Hiram A. Kimball and Andrew J. Lawrence, Philadelphia, Penn.—*Artificial Arm.*—May 23, 1865.—The fingers are opened and shut by means of a forked lever running into each other from a cross-bar in the palm, said cross-bar being moved to and fro in the direction of the thickness of the hand, by means of two elbow levers having their fulcra in the wrist, said elbow levers being operated by a strap extending up the arm, and communicating with another strap outside of the arm, by which motive power is applied. The arrangement is such that the motive power may be applied when the forearm is in any posi-

tion; and that the forearm may be set and held in any desired position. A non-elastic strap passes around the opposite shoulder from that which supports the artificial limb, and one end of this strap is buckled to an elastic strap to which are buckled the socket straps.

Claim.—First, the arrangement of the levers *b b'*, *j j*, and *n*, in combination with the spring *h*, to open and shut the fingers, in the manner substantially as above described.

Second, the lever *s*, by means of which the motive power acts upon the fingers when the forearm is in any position, said lever being constructed and arranged substantially as described.

Third, the bars *v v'*, in combination with the catch *y*, and rest A, whereby the forearm is set and held in any desired position, the whole constructed and arranged substantially as described.

Fourth, the employment of the elastic strap D, by which the artificial arm is held in position without chafing or confining other parts of the body, substantially as described.

No. 47,836.—J. W. KIMBALL, Boston, Mass., and JOHN MAHADY, Cambridge, Mass.—*Shoulder Supporter.*—May 23, 1865.—This invention consists in attaching to or around the shoulders, straps or braces, which are united behind, and connected by another strap to the back of the chair.

Claim.—A combination of shoulder straps, with an attaching strap, substantially as and for the purpose described.

No. 47,837.—T. S. LAMBERT, Peekskill, N. Y.—*Double Window.*—May 23, 1865.—This invention consists in providing an inside double window, composed of an upper and lower sash, sliding in the stop of the outer window, and made to press against the sash by a strip of paper, cloth, rubber, or other material that thus obstructs the passage of air, and serves also to sustain the sashes when raised or lowered. The front of the stop is also furnished with a moulding or strip, applied so as to cover the material behind the stop, so that the whole has a neat finished appearance.

Claim.—The combination of the convertible stop F and its moulding I, and the sashes G and H, with the frame A, in the manner and for the purpose substantially as set forth.

Second, the combination of the material *k*, with the stop F, the moulding I, the sashes G and H, and the frame A, in the manner and for the purpose substantially as set forth.

No. 47,838.—GEORGE LEACH, Elmira, N. Y.—*Rotary Fan.*—May 23, 1865.—This invention consists of a fan so constructed that a steady and uniform blast is produced, having an equal strength and volume on a given line from the fan case, for the purpose of separating light from heavy grains, in grain-separating machines.

Claim.—The combination of the fan shaft and the disk, with wings attached thereto.

Also, the described taper-form of wings in combination with the disk, substantially as described.

No. 47,839.—GEORGE LEACH, Elmira, N. Y.—*Fanning Mill.*—May 23, 1865.—This invention consists of a grain board placed above the upper sieve, and made adjustable, so that the falling sheet of grain enters the blast from the fan at a given point, and by this means effects a separation of the light from the heavy grain.

Claim.—The slide board *k*, whose front edges are adjustable and operative for the purpose described, at all points longitudinally of the effective length of the sieve *g'*, in combination with the notched adjusting handle *i*.

No. 47,840.—JOEL LEE, Galesburg, Ill.—*Farm Gate.*—May 23, 1865.—This invention consists in the employment of a swivel guide with a friction wheel, and the arrangement of the several parts therewith.

Claim.—First, the swivel guide and friction wheel, for the purposes set forth.

Second, the combination of the gate A, the post B, the stop C, the block H, and the cap I, with the swivel guide and friction wheel, all arranged substantially as and for the purpose specified.

No. 47,841.—ANDREW J. LOOMIS, Madrid, N. Y.—*Burglar Alarm.*—May 23, 1865.—This invention consists of a plate properly secured to a door, and having upon it a nipple upon which a percussion cap is to be placed. A hammer is pivoted on a shaft upon which is wound a spiral spring, which constantly tends to project the hammer towards the nipple. A plate is secured to the door post, which holds the hammer ready to strike the cap, and give the alarm as the door is opened.

Claim.—The combination of the plate A, the hammer with its axial shaft E and spring F, the catch G, the whole arranged substantially as described, and applied in the manner and for the purpose specified.

No. 47,842.—WALTER K. MARVIN, New York, N. Y.—*Lock.*—May 23, 1865.—The lock embodying these improvements is too complicated in its structure to admit of an intelligible description without particular reference to the drawings.

Claim.—First, the combination with the movable stump and movable tumblers, of a system of leverage, arranged substantially in the manner herein described, so as to prevent detection of the position of the gates or notches in the tumblers, as herein set forth.

Second, in permutation locks, having rotary tumblers or wheels, the friction brake or brakes, in combination with the eccentric, arranged and operated substantially in the manner and for the purpose set forth.

No. 47,843.—EDWARD MAYNARD, Washington, D. C.—*Button Holder.*—May 23, 1865.—This invention consists of a metallic blank, formed either into a cylindrical shank with tongues at both ends to be folded over on the upper side of the button and the under side of the cloth, or into a cup to be set into the upper shell of the button, the said cup being provided with tongues on its bottom part, to be folded over on the under side of the cloth.

Claim.—A metallic collet or base for the buttons, having tongues or points stamped out centrally therefrom, substantially in the manner and for the purpose herein set forth.

Also, as a new article of manufacture, metallic fasteners for buttons, formed of a polygonal or cylindrical shank, having tongues or points projecting from the ends thereof, substantially in the manner and for the purpose herein set forth.

No. 47,844.—B. H. MCNULTY and WM. MCKERN, Mansfield, Ohio.—*Process for Tanning.*—May 23, 1865.—This invention consists in subjecting the hides to the action of the tanning liquor in air-tight vessels, under heavy hydraulic pressure. To effect this the hides are placed in a close vessel, which is provided with a rotary stirrer, and the tanning liquor is forced into said vessel by means of a force pump attached to the pipe.

Claim.—First, the tanning process herein described, the same consisting in agitating the liquid by a rotary dasher E, or equivalent mechanical means, while under pressure within the vat, substantially as and for the purposes set forth.

Second, the apparatus used in the above process, comprising the vat A, lid A′, packing *a*, nozzle D, braces or retainers C, and dasher E, combined and arranged in the manner herein described and represented.

No. 47,844.—HENRY MITCHELL, Richmond, Ind.—*Cook Stove.*—May 23, 1863.—In this invention, from the rear of the fire chamber the flue passes down between the front plate of the stove and front plate of the oven, under and behind the oven, up into the space between the top plate of the stove and the top plate of the oven, where a metal plate extends obliquely from one side across, and diverts the flow around it to the chimney flue, which is situated at the side of the stove, and near the fire chamber. By opening the damper in one side of the partition plate at the back of the fire chamber, a direct draught can be established,

Claim.—The combination and arrangement of the plate C containing the damper B at the upper front corner of the oven with the flues I J and K, and the location of the guide plate A, and of the pipe H, by means of which the heat is taken by the shortest and most direct route entirely around the oven.

No. 47,846.—S. J. MITCHELL, St. Louis, Mo.—*Lightning Rod.*—May 23, 1865.—The object of this invention is to produce a lightning rod which will conduct the fluid with more certainty to the conductor or main rod, while it also presents a great number of attaching points, or a large attracting surface without increasing the difficulties of construction or the cost.

Claim.—The separator or division of the main point A into two bars, connecting by means of branches *d* with the stem B of the rod, substantially as described.

No. 47,847.—F. H. MOORE, Boston, Mass.—*Device for Pulling on Boots.*—May 23, 1865.—The object of this invention is to produce a substitute for boot straps, and it consists in providing an aperture or apertures in the boot leg for the insertion of one or more fingers for pulling on the boot; the said aperture or apertures being protected from tearing or from being otherwise injured by surrounding their edge or edges with a border made of metal or other suitable material; also in forming said border on its inner, or outer, or both faces of the boot leg, raised up or rounded, so as to protect the fingers from injury.

Claim.—First, forming one or more apertures in the leg of boots or shoes, and providing the edge of such aperture or apertures with a convex border or flange, in the manner substantially as hereinbefore described, and for the purposes set forth.

Second, as an article of manufacture, boot or shoe legs having, for the purposes set forth, one or more bordered or flanged apertures, substantially as herein described.

Third, as an article of manufacture, a boot or shoe, the legs of which, for the purpose of pulling on said boots or shoes, are provided with one or more bordered or flanged apertures, substantially as described or set forth.

No. 47,848.—S. C. MOORE, Boston, Mass.—*Friction Match.*—May 23, 1865.—The burning substance is placed on one end of the splint and the igniting substance on the other, so that in order to ignite the match the splint must be broken in two and the two prepared ends rubbed together. In this way the walls of rooms are saved from the defacement caused by rubbing matches on them, and there is always a surface on which to strike the match.

Claim.—Putting the lighting or burning substance on one end or side of the splint or match and the lighting or igniting substance on the other end or side of the splint or match, substantially as described.

No. 47,849.—Oliver Morse, Needham Lower Falls, Mass.—*Bed Plate for Paper-mill Engines.*—May 23, 1865.—In this invention the main part of the bed always remains in the same position, and may be secured in its place, while the steel knives as they wear away may be raised and adjusted firmly to the required elevation, and always kept projecting above the interposed layers of wood, and the latter prevented from being worn away.

Claim.—So applying the grinding plates or knives to the bed as to allow of their being raised or lowered relatively thereto, substantially as hereinbefore set forth.

Also, the combination of the steel grinding knives with the clamp bar, when the latter are constructed with a series of slots, substantially in the manner and for the purpose hereinbefore set forth.

No. 47,850.—Joel Moulton, Boston, Mass.—*Rock Drill.*—May 23, 1865.—The object of this invention is to construct a drill which as the shaft is lifted for a stroke shall be turned so as to cause the cutting face to descend in a new place, causing the drill to turn without the revolution of the stock.

Claim.—First, causing the drill to revolve by means of the collar C, carrying projections which traverse oblique grooves in the position to be rotated in combination with the ratchet teeth D and pawls E, as described.

Second, the described dress to the face of the reamer, consisting of serrations or teeth which run in the reverse direction on the different sides.

No. 47,851.—Ira F. Munson, Washington, D. C.—*Musical Instrument.*—May 23, 1865.—This invention consists in the construction of violins, &c., from sheet gelatin.

Claim.—First, the use of glue, gelatin, or other analogous substance in the manufacture of musical instruments or parts of such instruments, for the purpose of obtaining increased volume of tone and sonorousness, substantially as described.

Second, uniting parts of musical instruments together by means of the material of which such parts are composed, for the purpose of obtaining homogeneousness, substantially as described.

Third, the use of water-proof composition in the manufacture of musical instruments or parts of instruments, substantially as described.

No. 47,852.—John L. Otis, Florence, Mass., and Samuel L. Otis, Manchester, Conn.—*Knitting-machine Needle.*—May 23, 1865.—In this invention the sliding latch, when the needle is drawn back after receiving the yarn, is raised over the point of the hook to allow the discharge of the old loop; a stop holds the catch in proper position to receive the yarn for a new stitch, and to permit the old loop to slip over its point, whilst it is buried in a groove in the needle; the needle and slide being of the same thickness, operate in the same slot of the needle bed, while the cam causes the curved point of the hook to rise and fall to effect the reception and casting-off of the loop.

Claim.—First, the recess *d* in the needle shank, to operate in combination with the stop *c* on the latch, substantially as and for the purpose set forth.

Second, making the needle and latch of one thickness, and operating them in the same slot of the needle bed, as specified.

Third, the stop *e* and curved point of the latch, in combination with the cam *g*, constructed and operating substantially as and for the purpose described.

No. 47,853.—O. S. Parmenter, Providence, R. I.—*Machine for Ornamenting Jewelry, Plate, &c.*—May 23, 1865.—This invention consists of a shaft carrying in one end an engraver's tool, the edge of which is chisel-shaped, and adjusted centrally therein, and against which the material to be ornamented is held. A rapid vibratory motion is given to the shaft by an arm or lever therein, connected by a rod to a crank on a rapidly revolving driving shaft The pin of the crank is made adjustable to or from the centre to give more or less vibration to the shaft carrying the tool.

Claim.—The machine for ornamental engraving, constructed and operating in the manner and on the principle substantially as described.

No. 47,854.—Franklin P. Peregoy, Indian Valley, Cal.—*Shafting.*—May 23, 1865.—This invention consists in providing a guide and journal for horizontal and upright shafting, so arranged by means of rollers as to overcome a large amount of friction, especially when applied to the stem of stamps used in quartz mills.

Claim.—The combination and arrangement of the guide blocks C C C C, with the set screws G G, and the friction rollers D D D D.

Also, the manner of connecting the two sections by means of the slideways H H, substantially as set forth.

No. 47,855.—S. M. Prentice, Southington, Ohio.—*Seeding Machine.*—May 23, 1865.—This invention consists in mounting the rear end of the seed box upon a spring for the purpose of securing a steady and uniform supply of seed to the feed wheel.

Claim.—The seed box or hopper D, resting at its back end upon a spring F, substantially as shown, and for the purpose of feeding and supplying the seed uniformly to the distributing wheel C, as set forth.

No. 47,856.—Clarissa Preston, Detroit, Mich.—*Corset.*—May 23, 1865.—This invention consists in combining with a corset a bustle, provided at the lower part thereof in the rear with an extension brace, so arranged horizontally that it can be easily adjusted to the body of the wearer. The extension brace is adjusted to the requisite width by a hook catching in different slots or other convenient means.

Claim.—A combined corset and supporter, arranged with hooks or clasps *a* in front, and made to lace in the rear, and provided with a bustle B and extension brace *g*, substantially as and for the purpose set forth.

No. 47,857.—O. E. Randall, Lewiston, Maine.—*Horse Rake.*—May 23, 1865.—This invention consists in the combination of several parts designated in the claim, from which in connection with the engraving it will be readily understood.

Claim.—The combination of the bars F, arms *i i*, shaft E and teeth G G, all constructed, arranged, and operating substantially as set forth.

No. 47,858.—S. G. Randall, New York, N. Y.—*Mode of Propelling Railroad Cars.*—May 23, 1865.—This invention consists in the employment or use of a pipe extending under the railroad track, and provided with a number of outlets at suitable intervals, in combination with a moving reservoir attached to or connected with a passenger car, and furnished with suitable mechanism for propelling itself and the car, in such a manner that through the pipe compressed air may be introduced into the reservoir at any point on the road, and the car can be supplied with a cheap and reliable motive power.

Claim.—The air-supply pipe *a*, provided with suitable spouts *b*, and applied in combination with the movable reservoir C and car A, substantially in the manner and for the purpose set forth.

No. 47,859.—T. K. Reed, North Bridgewater, Mass.—*Boots and Shoes.*—May 23, 1865.—This invention consists in the construction of turned shoes, by which the whole thickness of the sole is made available for wear, and by which the shoe is made by the appearance of a seam around the edge of the sole, to resemble the best kind of hand-made welted work. It also consists in sewing to the sole the piece to which the vamp is united, instead of forming said piece out of the material thereof, by cutting into the inner surface of the sole.

Claim.—A boot and shoe having the construction substantially as specified.

No. 47,860.—C. B. Richards, Hartford, Conn.—*Adjustment for Optical Instruments.*—May 23, 1865.—This invention consists in so supporting and guiding on one or more anti-friction wheels that part of an optical instrument which is made movable, for the purpose of effecting its focal adjustment, that the movements of this said part may be produced by a smooth friction roll, which is pressed against a smooth surface formed on the movable part.

Claim.—The employment in combination with the adjustable parts of an optical instrument of one or more anti-friction wheels, and a friction roll, operating to effect the adjustment to focus, substantially in the manner hereinbefore clearly described, for the purpose set forth.

No. 47,861.—D. M. Robertson, East Boston, Mass., and Jason A. Bidwell, Boston, Mass.—*Machine for Shaving and Nicking Wood Screws.*—May 23, 1865.—This invention consists in a vibrating adjustable saw frame, by means of which the saw for nicking the screw head is presented to the head at the proper moment, does its work, and moves away again to permit of the operations of turning, which are done in the ordinary manner of turning screw heads.

Claim.—The vibrating adjustable saw frame R, in combination with the link T and cam T, which operate the frame and move the saw, as described.

Also, the rotating saw S, in combination with the right and left hand screw nuts, arranged to adjust and hold the saw opposite the centre of the arbor E, substantially as described.

No 47,862.—Herman Roettger, Philadelphia, Penn.—*Solar Camera.*—May 23, 1865.—This invention consists in the mode of pointing the instrument towards the sun, and in moving it to follow the sun's course. Also in constructing different sized boxes with grooves to hold the enlarged pictures.

Claim.—First, a camera stand constructed with two adjustments at right angles to each other, for the purpose of following the path of the sun by a single motion, substantially as shown and described.

Second, the grooves *k k m m*, in combination with a rigid camera box, as shown and described, for the purpose set forth.

Third, the double chamber S and B, when used to form a rigid camera box provided with slide grooves, as shown and described.

No. 47,863.—D. B. Rogers, Pittsburg, Penn.—*Car Truck Frame.*—May 23, 1865.—This invention consists in suspending the weight of car bodies upon levers or supports, so arranged as to bring a horizontal or longitudinal pressure upon the springs, instead of the usual vertical one.

Claim.—The sustaining beam, made substantially as described and for the purposes set forth.

Second, the suspending or resting of car bodies, substantially as described and for the purposes set forth.

No. 47,864.—JOHN B. ROOT, New York, N. Y.—*Screw Propeller.*—May 23, 1865.—This invention consists in constructing the operating faces of screw propeller blades with a hollow curvature in the direction in which the propelling force is exerted, for the purpose of making the propeller collect the water from its periphery, draw it toward its axis, and discharge it in a compact column in a direction parallel with its axis, thus producing the best propulsive effect. To effect this object the pitch of the propeller is gradually diminished from the peripheries of the blades toward the centre. It is found desirable to make the propeller with a large hub to receive the forward pressure produced by the concentration of the water toward the axis. In order to prevent the eddying of the water in rear of this hub, and to enable it to pass off freely, the rear portion of the hub is made of conical form.

Claim.—First, a screw propeller the blades of which have a curvature forward or in the direction of the revolution, combined with such a hollow curvature of the faces as is produced by a diminution of the pitch from the periphery toward the axis of the propeller, substantially as herein specified.

Second, the hollow rearward conical extension C of the hub, attached to the body B thereof, by being fitted into a groove *i* in the body, and secured by a central bolt *f*, which passes through the said extension and is screwed into the end of the propeller shaft, substantially as herein described.

No. 47,865.—J. F. SEVERENCE, East Bridgewater, Mass.—*Machine for Cutting Leather.*—May 23, 1865.—This invention consists in the combination of a presser bar and its knife-holding recess with a feed wheel and knife, of two slides with the presser bar and its knife-opening, and a stationary arm arranged with respect to a feed roller; and also of a gauge with the upper slider and the presser bar, when combined with a feed wheel.

Claim.—The combination of the presser bar F, and its knife-holding opening *h*, with the feed wheel C, or the same and a knife K, substantially in the manner and so as to operate therewith, as specified.

Also, the combination of the two sliders E L, and their clamp screws, or the equivalent thereof, with the presser bar F, its knife-holding opening *h*, and a stationary arm D, arranged with respect to the feed wheel C, substantially as hereinbefore set forth.

Also, the combination of the guage *m* with the upper slider L, and the presser bar F, when combined with a feed wheel in manner and so as to operate therewith and with a knife, substantially as hereinbefore explained.

No. 47,866.—JOHN SHEFFIELD, Pultneyville, N. Y.—*Water Meter.*—May 23, 1865.—This invention consists in adopting the principles of construction of the ordinary central discharge water wheel, to the purposes of a water meter.

Claim.—The combination of the wings *a a*, shaft D, gate *h*, and inlet passage O, all arranged to operate substantially as specified.

No. 47,867.—JOHN SMITH and E. M. NUTTER, Feltonville, Mass.—*Game Board.*—May 23, 1865; antedated March 3, 1865.—The game is called by the inventors the "battery game," and is played on a board made in imitation of a fort and surrounding grounds, having a pit to contain marbles, and dotted lines from a pivot gun in the fort. The gun is revolved, and whenever stopped in line with one marble, it must be removed, when stopped in range with two, the game is against the gun, and the marbles removed into the fort.

Claim.—The game board, as constructed, with the rotary cannon, the battery, and the cavities, arranged substantially as described.

No. 47,868.—JOHN Y. SMITH, Alexandria, Va.—*Boring Well.*—May 23, 1865.—This apparatus consists of a vertical cylinder, placed directly over the well, operated by steam; a hollow piston rod, or an arm attached to a solid piston rod, moving a rope of hemp or wire, to which the boring tools are attached; also in a mechanism for producing a continuous rotation of the rope in one direction, which also rotates the drum around which the rope is wound, and a mechanism for producing a self-adjusting automatic feed, which also serves to regulate the blow. And it further consists of a means of rotating the drum, to withdraw the tools and return them with great rapidity.

Claim.—First, in combination with a steam cylinder, whether arranged concentrically or eccentrically with said cylinder, a gripper box or other instrument, to intermittently hold and release the rope or cable, substantially as and for the purposes set forth.

Second, the combination with steam cylinder and gripper box, arranged as described, of a mechanism for intermittently rotating said box while firmly holding the tool, substantially as and for the purposes set forth.

Third, a mechanism for producing intermittent rotation of the rope continuously in the same direction, in combination with a mechanism for simultaneously untwisting the rope, substantially as set forth.

Fourth, in combination with a gripper box or the mechanical equivalent thereof, for rotating the rope continuously in the same direction, a drum around which the rope is wound, when said drum is hung in a frame revolving in the manner and for the purpose set forth.

Fifth, the method herein described of producing a self-adjusting automatic feed of the rope.

Sixth, the method herein described of regulating the force of the blow, substantially as set forth.

Seventh, the means herein described, or the mechanical equivalent thereof, for producing self-adjusting automatic feed, which also serves to regulate the force of the blow.

Eighth, the method herein described of rotating the drum to withdraw the tools and return them with great rapidity, substantially as set forth..

No. 47,869.—JOHN Y. SMITH, Alexandria, Va.—*Safety-valve Rubber.*—May 23, 1865.—This invention consists in the employment in the valve used for such purposes of a disk, made of sheet metal or composition, of a resistance to the pressure upon its surface equal to that which is calculated to be the limit of pressure to which the boiler may with safety be imposed, but which will be broken should any considerable increase of pressure arise from any cause; in which event a free passage for steam to escape into the atmosphere is opened. Combined with this valve is a stop-cock, located below it, which, in case the disk is broken, may be closed, to enable the person in attendance to stop the escape of steam, so that a new disk may be placed in the valve, and the work of the engine be resumed. To prevent closing this cock when the engine is in use a pendent rod passes through the aperture in the cock extending down into the valve case far enough to accomplish that object.

Claim.—First, combining with a safety valve, constructed in the usual manner as described, a metal disk of a resistance calculated to explode under a pressure exceeding that of safety.

Second, the construction of the valve of three parts, substantially as herein described and for the purposes set forth.

Third, in combination with a safety valve, constructed and operating as described, the stop-cock, for the purpose set forth.

Fourth, in combination with a valve and valve case, provided with a stop-cock, as described, the pendent rod fast to the disk, substantially as set forth.

No. 47,870.—JOHN Y. SMITH, Alexandria, Va.—*Rock-drill.*—May 23, 1865.—The object of this invention is to construct a drill which can be easily made and kept in working order, sharpened, or ground, and is calculated to penetrate the rock or other hard substance with great ease and rapidity, requiring no reamer, boring a truly circular hole, not being liable to tighten its joint in the socket, so that there is no danger of its getting detached from the auger stock.

Claim.—First, a rock drill, composed of three or more cutting blades, when recessed in the centre or at the point of intersection of said blades, substantially as set forth.

Second, forming the cutting edges of a three or more bladed rock drill, by bevelling one side of said blades in such manner as to tend to rotate the drill when striking a blow and to tighten the screw-joint, substantially as set forth.

Third, forming cutting edges upon the recessed portion of the blades, substantially as and for the purpose set forth.

No. 47,871.—JOHN Y. SMITH, Alexandria, Va.—*Oil Ejecter.*—May 23, 1865.—This invention consists in the combination of two tubes and a series of valves, so arranged that the well is divided into compartments, and the oil is raised from one to the other, beginning at the lower one, by means of steam or compressed air, which is admitted to the compartments through the inner pipe, which is caused to revolve in its place, thus bringing apertures made in its sides to register with corresponding apertures in the valves through which steam is admitted into the chambers, where it condenses and forms a vacuum, and the oil enters the orifice in the valve seat, and lifts the valve off its seat, in which position it will remain until an equilibrium is established, when the valve sinks to its seat, and the oil is retained to be acted upon by the next in the series of the vacuum-forming chambers.

Claim.—First, the combination with a suitable main tube and stationary valve seats, of a central revolving steam or air cylinder, provided with suitable valves, constructed and operating substantially as hereinbefore described, so that the steam or air is ejected into the space surrounding said cylinder, in the manner and for the purposes set forth.

Second, in combination with the above, the employment, at suitable intervals, and interposed between the sections of the outer tube, of valve chambers for the admission and retention therein of the liquid raised by the injection of steam or other elastic fluid, substantially as set forth.

Third, in combination with the interior cylinder and surrounding valve chambers, the slip-joint attachment, so as to admit of the perfect, yet easy, vertical adjustment of the valves into their respective seats, substantially as set forth.

Fourth, in combination with two concentric cylinders, making the valves and valve seats in the form of spherical caps, or uniting the cylinder sections by ball-joint attachments, so as to yield to lateral adjustment, substantially as set forth.

Fifth, in valve chambers constructed as described, and in combination with hemispherical valves, forming annular channels, in the manner and for the purpose set forth.

Sixth, the employment in an apparatus for raising liquid by direct action of steam and in combination with and as a lining of the steam cylinder of a hemp hose, whether or not boiled in linseed oil, substantially as set forth.

Seventh, the combination of a steam cylinder closed at the base with a hinge trap or valve, operated by a cord or rod in the manner and for the purposes set forth.

Eighth, in combination with a spherical valve, the employment of a steam deflector shield, operating substantially in the manner and for the purpose set forth.

No. 47,872.—MOORE SMITH, assignor to himself and P. W. WELLINGTON, Worcester, Mass.—*Horse-rake.*—May 23, 1865.—This invention relates to the combination of devices identified by the claim, and will be readily understood by reference to the same and the engraving.

Claim.—The combination of the tilting rake head A with the clutch G, clutch projections *g* and *d*, clutch lever E, and cam I, when constructed and operated substantially in the manner and for the purposes stated.

No. 47,873.—ROBERT SPENCER, New York, N. Y.—*Apparatus for Treating Ores*—May 23, 1865.—This invention consists of a furnace, provided with ore chambers, open at both ends, and communicating at one end with another chamber. These chambers are so arranged that they can be rotated, and are coated with enamel, which is not affected by the heat or by the action of the gases generated. The chamber communicates with a condenser, and the condenser with the chimney. The ore is shovelled into the chamber, and falls on the inclined bottom. It then passes into the chambers where the sulphur is driven off, and finally drops into a bath placed under the outer ends of the chambers. A current of air is kept constantly passing through the chambers and through the condenser into the chimney.

Claim.—Protecting metallic vessels which are used in the process of roasting ores by coating their exposed surfaces with a fire-proof enamel, substantially as described.

No. 47,874.—ROBERT SPENCER, New York, N. Y.—*Apparatus for Treating Ores.*—May 23, 1865.—This invention consists of a furnace, provided with rotating ore chambers and a hot-water chamber above said ore chambers. The amalgamating chamber is placed within another chamber, and is connected to the sides of the furnace at the top, forming gutters. The gutters communicate with a chamber by means of inclined gutters, and the ore is fed in a chamber, and passes down through desulphurizing chambers and falls into a water bath. It is then placed in a hopper, and enters the amalgamating chamber, where it is kept constantly agitated by means of stirrers. The chamber is kept filled with water by means of a pipe, and the muddy water passes off from the amalgamating chamber into the gutters, and from thence into a chamber where the mud is allowed to settle and the water is filtered, and again conveyed to the hot-water chamber.

Claim.—First, applying a series of revolving or oscillating wings or paddles within a vessel E, which is constructed with a central ridge *a*, over which the currents of mercury are interrupted in their passage from one side of the vessel to the other, substantially as described.

Second, the use of a double concave bottom amalgamating vessel, having revolving agitators arranged within it, substantially as described.

Third, the receiving troughs *c c*, in combination with a perforated cover E to the amalgamating vessel, substantially as described.

Fourth, conducting the waste water from the amalgamating vessel into the chamber D, substantially as described.

Fifth, the feeding vessel H in combination with two or more movable cylinders B, communicating with said vessel, substantially as described.

Sixth, the use of a water chamber D, partially surrounding an amalgamating vessel, whether it is mounted over a furnace or not, substantially as described.

Seventh, the combination of one or more rotating or oscillating cylinders B with an amalgamating vessel and a furnace C, substantially as described.

No. 47,875.—LE ROY S. STARRETT, Newburyport, Mass.—*Meat Cutter.*—May 23, 1865.—This invention consists in a combination of knives, operated by a crank and levers, and a rotating tub, so that the meat is cut uniformly and expeditiously.

Claim.—First, the combination of the walking beam I, pitman H, crank shaft E G, pawl A, rack P, and rotary bed O, arranged and operated as specified.

Second, the combination of the horizontal plate K, pendent rods *g*, knives L, rods L L, and guide rod M, constructed and arranged in the manner and for the purposes described.

No. 47,876.—J. M. STONE, assignor to himself, G. L. DAVIS, and G. A. WILEY, North Andover, Mass.—*Lathe Fastening.*—May 23, 1865.—In this device the bolt which holds the tool rest to the slide, which moves lengthwise of the lathe bed, has in its lower end and beneath the

surface of the slide a mortise in the transverse direction of the lathe; the bottom of the rear side of the said mortise is an inclined plane. Through this mortise, and running nearly to the front of the slide, is a bar, having a corresponding inclined plane. At the front side of the slide is a handle having a stem running in to, and the said bar screwing into it. The said stem pasess through a clamp mortised into the slide, and having a slight movement, so that by turning the handle to draw the inclined plane to tighten the tool slide, it at the same time forces the said clamp against the lathe frame, and holds the slide tight.

Claim.—Clamping the piece *c* to the piece *b*, and this to the way or frame *a*, by one adjustment, the construction and operation being substantially as described.

No. 47,877.—THOMAS SUMMERFIELD, New York, N. Y.—*Method of Securing Bushes for Bungs to Barrels.*—May 23, 1865.—This invention consists in clenching the nails which secure the bush to the barrel after the barrel has been completed, by means of a tool bent as shown in the engraving, and made with a flat head on one end and a grooved head on the other.

Claim.—Securing metallic bushes for bungs in barrels by means of nails clinched in the inner side of the stave by the lever anvil, substantially as set forth.

No. 47,878.—J. A. TALPEY, Somerville, Mass.—*Hoisting Apparatus.*—May 23, 1865.—This invention consists of two shafts, on each of which is a sprocket and a gear wheel, the two latter meshing with each other. The proportion between the diameters of the gear and sprocket wheel on one shaft differs from the proportion between the diameters of the gear and sprocket wheels on the other shaft, in order that by overhauling the endless chain which is connected with the teeth of the two sprocket pulleys, the block bearing the weight to be raised and connected by the chain with the sprockets may be raised or lowered as desired. The lower sprocket wheel is applied so that it may be thrown out of connection with the upper one and locked so as to prevent retroaction.

Claim.—The improved tackle or hoisting apparatus, consisting of two sprocket pulleys arranged, constructed, and geared together, and operating in conjunction with the endless chain and the loose block, substantially as specified.

Also, so applying the lower sprocket pulley that it may be disconnected from the upper one and keyed or fashioned in position, in the manner and for the purpose substantially as set forth.

No. 47,879.—J. B. TARR, Chicago, Ill.—*Keel for Ships and Other Navigable Vessels.*—May 23, 1865.—This invention is designed for vessels navigating the lakes, and which are often compelled to sail in shallow waters, and it consists in a keel which expands laterally on each side of the centre of the vessel's bottom so as partially to enclose a large body of water on either side.

Claim.—The horizontal keel *c* when constructed and applied as herein specified so that its upper surface will be nearly parallel with the ship's bottom and its edge on the lee side will present an acute angle to the water, while the ship is careened to any extent.

No. 47,880.—EDWIN THURSTON and JAMES R. LEDYARD, Covington, Ky.—*Car Truck.*—May 23, 1865.—This invention consists in constructing and using iron bolsters with cast end-pieces or housings put together in such a manner as to stiffen or brace the arch bars and lower bolster and serve as a guide for the top bolster to work in.

Claim.—First, the construction and use of skeleton iron bolsters B and C, which admit of great strength and durability, and can be used either as centre bearings or side bearings.

Second, the construction and use of the cast end piece A, which serves to stiffen or brace arch bars and lower bolster; also serves as a guide for top bolster to work in, and in connection with bolster, forming a truck, combining strength, durability and lightness with ease of access in all its parts for repairs.

No. 47,881.—W. B. TREADWELL, Albany, N. Y.—*Base-burning Stove.*—May 23, 1865.—In this invention the fire pot terminates at the flue point with an angular extension, so that there is a passage between it and the bevelled edges of the fire brick in the upper chamber. The products of combustion flow into a chamber back of this angular projection, into which the exit pipe opens at the top, and the draught pipe at the bottom, and circulate downwards and upwards through the stove, and pass off near the top; or by opening a damper in the exit pipe, they may flow from the chamber directly to the chimney.

Claim.—First, the fire pot C, with the flaring-lipped extension *e f d*, in combination with a base-burning stove, which has a coal-supply magazine G, substantially as and for the purpose set forth.

Second, the combination of the flaring-lipped extension *e f* with the bevelled brick E, substantially in the manner and for the purpose described.

Third, the arrangement of perforated valve I, chamber K, flues J and H, and the branch flue N, with a base-burning stove, constructed substantially as described, for the purpose set forth.

No. 47,882.—G. L. TURNER, New York, N. Y.—*Machinery for Coiling Springs.*—May 23, 1865.—This machine consists partly of a mandrel for coiling spiral springs when coils do not

lap each other, as conical volute springs. The head is fitted into a socket provided for its reception in a rotating arbor, and the opposite end of which is provided with a journal fitted to a bearing provided for its reception in a sliding arbor. The mandrel is furnished with a flat collar of hardened steel, and the rotating arbor with a hardened steel bushing for the reception of such collar. The mandrel is provided with a head block of wrought iron or steel, the object of which is to secure the bar of which the spring is to be formed to the mandrel during the coiling operation, and to keep the bar edgewise during the operation, or in whatever position is desired.

Claim.—First, in machines for coiling steel springs, whether used for coiling volute, spiral, or other steel or metallic springs, the employment and use of the collars *b* and *b'*, on the mandrel, and the bushing C and C', in the socket of the rotating arbor, which receives the mandrel, in combination with the mandrel E and the rotating arbor C, substantially as and for the purposes above described.

Second, in machines for coiling spiral springs, the employment and use of a base or head block, such as that shown at G, or its equivalent, with holding or griping devices, such as those herein shown and described, or their equivalents, in combination with the mandrel E, the worm P, the guide *n*, and the collar M, when used for producing spirally-formed springs, with parallel ends on the said mandrel, substantially as and for the purposes above set forth.

Third, in machines for coiling metallic springs of a spiral form, the employment and use of a movable collar, such as that shown at M, or its equivalent, in combination with the worm P, the mandrel F, and the guide *n*, when used for the purpose of making that end of the spring which is next to the said collar perpendicular to the axis of the mandrel, substantially as and for the purpose above set forth.

Fourth, the employment and use of a guide, such as that shown at *n*, or its equivalent, in combination with the mandrel E, the worm P, and the collar M, when used for the purpose of suddenly checking the diagonal movement of the end of the bar, and of keeping in its necessary vertical position—that is to say, at right angles to the mandrel, and guiding it at right angles with the face of the mandrel preparatory to forming that end of the spring parallel, substantially as and for the purpose above described.

Fifth, the worm P, or its equivalent, in combination with a coiling mandrel, when used for coiling spiral springs, substantially as above described.

Sixth, in machines for coiling spiral or other steel springs, the employment and use of a friction band T, or its equivalent, in combination with the spring T, the worm shaft P, and the frame P^2, or their equivalents, when used for the purpose of coiling metallic springs, substantially as above described.

Seventh, the employment and use of adjustable guides, such as those shown at W W' S S and S' S', or their equivalents, in combination with the sliding table U, or their equivalent carriage, and when used for the purpose of keeping the width of the bar vertical, and of guiding it diagonally between the threads of the worm and the face of the mandrel during the process of coiling the spring, substantially as herein set forth.

Eighth, the distance gauge X, or its equivalent, applied upon the sliding tube U, or other equivalent carriage, to operate substantially as above described.

Ninth, the employment and use of the cams R R, in combination with the frame P^2 and the worm P, the office of said cams being to elevate and hold in proper position the frame P^2 and the worm P during the operation of coiling spiral springs, substantially as above set forth.

Tenth, the employment and use of the collar 42, constructed as shown, and secured adjustably to the sliding arbor D, in combination with the cap lever Q, constructed as shown, for the purpose of holding the said arbor stationary during the operation of coiling volute, spiral, or other metallic springs, substantially as above described.

No. 47,883.—ROSWELL WAKEMAN and J. L. BALLANCE, Port Deposit, Md.—*Cutting and Pressing Hay, &c.*—May 23, 1865.—This invention consists of a feed cutter, a stamping apparatus, a screw and follower, and a vertical double rotating adjustable platform, containing two press boxes, so that while one is being filled with cut hay the contents of the other can be pressed into a compact bundle, and discharged from the press through openings, one in each side of the box.

Claim.—First, the hay cutter, so combined with a hay press, and so arranged and operated as to discharge the cut hay into the pressing box, in combination with an automatic stamping or packing apparatus, substantially as and for the purposes herein set forth.

Second, the manner of fastening the doors of the packing or pressing boxes, as herein described.

Third, the combination of machinery herein described, for pressing cut hay into bales.

No. 47,884.—JAMES WATSON, Cliff Mine, Mich.—*Apparatus for Washing Ore.*—May 23, 1865.—This invention consists of a long rectangular trough, suspended by hooks, and provided with stops at suitable distances apart, on the inside of the trough. These stops consist of strips of wood extending from one side of the trough to the other, and kept in place by posts. A vibrating motion is imparted to the trough by means of a cam working against the end of a beam. The ore is supplied through the aperture in the chute.

Claim.—The use of a long tie or trough, suspended so as to vibrate against a revolving cam or other device for giving to it a vibrating shock, in combination with a series of movable stops, constructed and arranged substantially as and for the purposes hereinbefore set forth.

No. 47,885.—AMOS WESTCOTT, Syracuse, N. Y.—*Attaching Cranks to Machinery.*—May 23, 1865.—This invention consists in so constructing a crank that by turning it in one direction the crank is fastened to the shaft, and by turning in the opposite direction the crank is taken off.

Claim.—A crank, constructed with the hole *c* and slot D, Fig. 1, in the arm thereof, in combination with the flat-shanked screw B, Fig. 1, by which it can be attached to the shaft, substantially as above described.

No. 47,886.—ELBRIDGE WHEELER, Feltonville, Mass —*Rolling Mill.*—May 23, 1865.—This invention consists in uniting the ends of the rolls that project beyond the housings with an adjustable yoke to prevent them from springing apart; also in fastening the sections of dies or rings upon the shafts by means of screw threads cut on the shafts themselves, and a nut run thereon, so that the screw shall expand with the shaft as the latter expands; and also in countersinking one side of the die ring and forming a shoulder on the next adjacent die ring to fit into it, so as to prevent the formation of a fin upon the metal which is being rolled.

Claim.—Uniting the projecting ends of the rolls or shafts by means of a link or yoke, substantially as and for the purpose described.

Also, the holding of the sections of dies or rings or their shafts, by means of screw threads cut upon the shafts, and a nut or nuts run up against them, substantially as described.

Also, the fitting together of the sectional rings or dies by means of countersinks upon one, and a projection upon the next adjacent one, to break the joint between them, and thus prevent the forming of a fin upon the article being rolled, substantially as described.

No. 47,887.—THOMAS WHITSON, Woodstock, Ill.—*Stove-pipe Drum.*—May 23, 1865.—In this invention the chamber at the bottom is divided by partitions into three parts, and connected by pipes with an upper chamber, also divided into three parts, so that when the damper in the direct or central flue passage is closed the draught passes up at the sides of the lower chamber and through the outer pipes into the upper chamber, and down the inner pipes to the lower chamber and thence up the central or main pipe to the exit flue.

Claim.—A heat radiator for use in connection with a stove, consisting in a base B and top E, provided with the partitions C and F, connected by the flues H and J *j*, and return flues L, and provided with the valves D and G, and with or without the transverse pipes K, substantially as described.

No. 47,888.—MOSES G. WILDER, West Meriden, Conn.—*Forming Tubes of Sheet Metal.*—May 23, 1865.—This invention consists in forming tubes of thin sheet metal, the blanks of which are of greater breadth than the perimeter of said tubes, which, when bent, are compressed in a die into the perimeter corresponding to the circumference of the tube.

Claim.—The process of forming tubes of thin sheet metal by compressing blanks of greater breadth than the development of the perimeter of the required tube into that perimeter, substantially as set forth.

No 47,889.—WARREN H. WILKINSON, Springfield, Mass.—*Valise for Artillery Harness.*—May 23, 1865.—This invention consists in a valise made with a hollow or concavity, to fit to and upon the top surface of the saddle of the horse. The valise is made with side fastenings and two straps attached to the bottom.

Claim.—The improved artillery valise, as made with the hollow or concavity *a*, to fit and rest upon the seat of the saddle, substantially in manner as described.

Also, the combination and arrangement of the bottom or girth straps *c c*, with the valise made with the arched or concave bottom, as described.

Also, the combination and arrangement of the four side eyes *b b b b*, and their straps *c c c c*, with the valise, made with the arched or concave bottom, as described.

No. 47,890.—CHARLES J. WOOLSON, Cleveland, Ohio.—*Cooking Stove.*—May 23, 1865.—In this invention a curved iron plate has one edge resting upon the division or fire plate below its upper edge, and the other upon a top oven plate, at a little distance from the fire plate, so that the escape of the products of combustion is regulated in such a manner as to protect the fire plate and top oven plate.

Claim.—A detachable curved iron plate, when arranged in relation to the oven and fire plate of cooking stoves, in the manner and for the purpose set forth and described.

No. 47,891.—JACOB B. BAILEY, New York, N. Y., assignor to SAMUEL E. BAILEY, Springfield, Mass.—*Curtain Fixtures.*—May 23, 1865.—This invention consists of a ring-shaped clamping bracket, receiving the end of the curtain roller and resting thereon with sufficient

friction to prevent the weight of the curtain from turning the roller. The roller is provided with ring flanges at the ends, which are slipped upon the roller, and the cord by which the curtain is wound up is attached directly to the roller.

Claim.—First, the ring socket *c*, receiving the end of the curtain roller, in combination with the clamping piece *d*, introduced and actuated as and for the purpose specified.

Second, a flanged spool, with an opening through its centre for the curtain roller, the said spool being retained in place by attaching the cord, substantially as specified.

Third, a contractile India-rubber band, applied substantially as specified, to create friction for preventing the weight of the curtain turning the roller.

Fourth, a curtain roller, in which friction is applied to sustain the curtain in any position, in combination with two cord spools wound in opposite directions, for the purpose and as specified.

No. 47,892.—GEORGE W. BENTLEY, assignor to himself and CHARLES S. HINE, New York, N. Y.—*Machine for Manufacturing Boxes of Sheet Metal.*—May 23, 1865.—In this machine the forming wheel or mandrel, carrying the ring or cylinder of sheet metal for the body and lid of the box, is pivoted on the wrist of an adjustable crank, by which means its relation to the upper wheel or die is regulated. This arc is on the end of a shaft parallel with the axis of the lower mandrel, but is allowed a slight adjustability to or from the same vertically, and is geared thereto, which cause their peripheries to move together, and the ring being put upon the mandrel, and the upper wheel pressed down by a lever or treadle, the operation of turning the flange or forming a groove in said ring is the same as in machines in common use for that purpose.

Claim.—First, in combination with the frame F, provided with the shafts *a* and *i* and lever *h*, the burr wheels *c k p* and *q*, when the same shall be constructed and operated substantially as shown, for the purposes specified.

Second, the adjustable bearing *m* with its adjuncts, when the same shall be combined, substantially as shown, for the purposes specified.

No. 47,893.—GEORGE F. BLAKE, Medford, Mass., assignor to himself, PETER HUBBELL, and JOB A. TURNER, Boston, Mass.—*Water Meter.*—May 23, 1865.—This apparatus consists of two parallel cylinders surmounted by a water chamber, and resting upon the main water ways. The eduction ports are in the bottom of the cylinders, and the water passes to them from the water chamber above by water ways made through the bodies of the plungers. The valve cups are made in the bottom of the plungers, which are kept from turning in their respective cylinders by means of pins received into longitudinal grooves in their surfaces. A registering mechanism of any suitable kind is attached and operated by the reciprocation of the plungers in the usual way.

Claim.—First, so constructing the plungers or pistons of water meters that they shall perform the function of valves, and thus do away with the necessity for independent valves and their connections, substantially as specified.

Second, in combination with the foregoing, making the plunger at each cylinder control the supply and exhaust of its twin or oppostite cylinder, in the manner described.

Third, passing the supply water through the body of the plungers by means of water ways, arranged and operating substantially in the manner and for the purpose set forth.

No. 47,894.—WILLIAM M. BRYANT, assignor to himself, JOHN R. ELVANS, and JOHN B. WHEELER, Washington, D. C.—*Whiffletree Irons.*—May 23, 1865.—This invention consists in constructing whiffletree ferrules with a shouldered stem, which is cylindrical for a portion of its length, and oblong or T-shaped for the remainder thereof. The broad portion of the stem can be turned round to a position which will permit it to enter the slot or eye of a trace, and after it has passed through the said eye may be turned back and around to a position at right angles to the length of the slot or eye.

Claim.—First, constructing the ferrules A, for swingle or whiffle trees, with the stops or shoulders *d e* and inclined or bevel *f*, substantially in the manner and for the purpose described.

Second, in combination with the subject-matter of the first clause of the claim, the turning stem B, with its locking pin *j*, substantially as described.

Third, in combination with the subject-matter of the first and second clauses of the claim, the screw fastening *k*, substantially as herein described.

No. 47,895.—WILLIAM ENNIS, assignor to himself and OSBORNE MACDANIEL, New York, N. Y.—*Fire-Pot for Stove, &c.*—May 23, 1865.—The object of this invention is to construct a fire-pot for burning superheated steam, so arranged that the steam is both generated and superheated in the fire-pot itself, whereby an independent boiler is dispensed with. To attain this end the fire-pot is made in hollow metal sections, so divided by partitions that three chambers are formed. The one in which the steam is generated is connected by pipes with another chamber and the superheater, and the third is perforated to discharge the superheated steam into the burning fuel, and is connected with the superheating chamber by a pipe also.

Claim.—First, the method of generating steam in the fire-pot retort itself, as and for the purpose herein described.

Second, the construction of the steam generator A, combined with the feed-pipe *a*, leading into the steam chamber *m*, and the escape-pipe *b*, leading into the superheater B, as and for the purpose herein described.

Third, the combination of the steam generator A, the superheater B, and the distributors C C, connected with the pipes *a b* and *c*, as and for the purpose herein described.

Fourth, the construction of a retort, divided by partitions into chambers or sections, formed of one or more pieces, as and for the purpose herein described.

No. 47,896.—W. H. HART, Meriden, Conn., assignor to himself and GILBERT ROGERS, of the same place.—*Oiler.*—May 23, 1865.—This device is intended more particularly to be a pocket oiler. Its sides are made of any elastic metal, and are slightly oval or rounded, and are soldered together. To the top of these plates is attached a nut having an inside screw thread for a tube, and an outside screw thread for a cap to fit tightly over the tube. When the cap is removed the oil is forced out through the tube by compressing the elastic sides of the oiler.

Claim.—First, the construction of an oiler, substantially as described, having two oval sides, so that the double spring consequent upon the described construction of the same may be obtained, substantially as set forth.

Second, the construction of an oiler with the double spring in the two sides, in combination with the use of the rubber in the top of the cap, and pressing upon the tube, substantially as set forth, using for that purpose any suitable metal or material to accomplish the desired result, or that will produce the intended effect.

No. 47,897.—HENRY HOWSON, assignor to WILLIAM WHARTON, jr., Philadelphia, Penn.—*Well Boring.*—May 23, 1865.—This invention consists of certain mechanism, to be used in boring for oil, its main advantage being its ready applicability to the boring of wells, and to the raising and lowering of boring tools. It combines simplicity, cheapness, lightness as regards construction, rapidity of action, economical and judicious disposal of power, and lateral turning of the boring bar without the aid of an attendant.

Claim.—First, the combination of the crank I, its pin and the lever Q, with the drill rod or rope of well-boring apparatus, the whole being arranged and operating substantially as set forth for the purposes specified.

Second, the arrangement substantially as described of the driving shaft H, its winding barrel J, the clutch K or its equivalent, cog wheels L and M, or equivalent driving gear, the crank shaft *h* and beam Q.

Third, the lever T, adapted to the boring rod or drill rope, and constructed for grasping and releasing the same, substantially as set forth.

Fourth, the said grasping and releasing lever in combination with the bent or curved guides V V or their equivalents, whereby the said lever is caused to turn laterally to a limited extent, in the manner and for the purpose described.

Fifth, the combination of the said grasping lever with the chain or cord *g*, or the equivalent to the same.

No. 47,898.—E. C. C. KELLOGG, assignor to himself and JAMES E. COLEMAN, Hartford, Conn.—*Stocks for Holding Screw Cutting Dies.*—May 23, 1865.—This invention consists in making the opening in the plate with inclined sides, and the ends of the dies with corresponding inclines, and arranging upon the side of the plate upon which the opening is widest, two plates transversely, each with two oblique openings through which they are held to the stock by screws; these oblique slots are so arranged that the plates approach or recede from the centre of the dies sufficiently to cover their ends and hold them in place, or uncover and release them as desired, by being wound laterally in one direction or the other.

Claim.—First, the slotted plates D D′ and screws *e e e′ e′*, in combination with each other, and with the stock and dies, substantially as and for the purpose herein specified.

Second, the cavity *b* in the handle *a′* having a female screw thread *e″* at its mouth, in combination with the pin wrench E having a male screw thread *e‴* near its head, substantially as and for the purpose herein specified.

No. 47,899.—E. C. C. KELLOGG, assignor to himself and JAMES E. COLEMAN, Hartford, Conn.—*Tool for Opening Boxes.*—May 23, 1865.—This invention consists in arranging upon one end of a handle or lever a screwdriver, and a pair of jaws to be forced into the board upon each side of the nail head for displacing the wood, and upon the other end of the lever a jaw so hinged upon a fulcrum, that also forms another jaw, in such manner as to drop into the indentations aforesaid around the nail head, and grasping so as to draw the nail out. Near the same end, upon the opposite side of the lever is arranged a shaving apparatus for shaving off old directions.

Claim.—The within described instrument, constituting a box opener and a scraper, having the parts arranged and combined as herein set forth.

No. 47,900.—E. H. LEWIS, assignor to himself and N. BALDWIN, Kingston, N. Y.—*Machine for Polishing and Dressing Stone.*—May 23, 1865.—This invention consists in the

use of a slide with adjustable clamps and stops, combined with a plate of cast iron, forming the guide for the slide, which moves up and down, and a hand lever serving to put the slide in motion.

Claim.—The slide C, with adjustable clamp D and stops *d*, in combination with the plate A and hand-lever E or its equivalent, constructed and operating substantially as and for the purpose set forth.

No. 47,901.—THOS. J. LOVEGROVE, assignor to himself and HENRY BALDWIN, Philadelphia, Penn.—*Casting Pipes.*—May 23, 1865.—This invention consists in pouring a sufficient quantity of metal in a cast-iron cylindrical mould, which is then allowed to roll down a plane of sufficient inclination to give a rapid rotary motion, by which a centrifugal force is generated, distributing the molten metal evenly over the interior surface of the mould, and continuing it long enough for the metal to become cool.

Claim.—First, making hollow castings by rolling the mould containing the molten metal down an inclined plane, substantially in the manner described.

Second, the combination of flanges on a rotating mould with a railway, for the purpose of giving the mould a parallel movement, as set forth.

No. 47,902.—W. H. and G. W. MILLER, Meriden, Conn., assignors to EDMUND PARKER, of the same place.—*Breech-loading Fire-arms.*—May 23, 1865.—The breech block is hinged to the top or side of the barrel, and is provided with a wedge-shaped projection, which fits a corresponding recess in the cone seat, so as to admit of the conversion of a muzzle-loader to a breech-loader, without change in the construction of stock, lock, or hammer. The breech block is held in position by a spring catch at the end opposite the hinge.

Claim.—First, the breech block C, hinged to the top or sides of the barrel A, and provided with a wedge-shaped projection *a*, to fit in a corresponding recess in the cone seat, all the said parts being constructed substantially as herein specified, so as to admit of a conversion of a muzzle-loading to a breech-loading gun without change in the construction or arrangement of the stock, lock, or hammer.

Second, the combination of the spring bolt *e*, ridge *f*, and groove *g*, with hinged breech-block C and barrel A, constructed and operating substantially as specified, and employed to sustain the recoil in form.

No. 47,903.—WILLIAM H. NOYES, assignor to himself and CHARLES H. WHEADON, Homer, N. Y.—*Thill Tug.*—May 23, 1865.—This invention consists of two parts connected by a joint, the tug being provided with a lining or inner ring of leather to prevent the abrasion of the thills; the lining ring being capable when worn by use of being removed from the tug, and replaced by a new one.

Claim.—A metallic thill tug composed of two parts *a a*, connected by a joint *b*, and provided with a chafing ring E, substantially as herein shown and described.

No. 47,904.—EDWARD PHIFER, Trenton, N. J., assignor to himself and JAMES M. GROVER, Lawrenceville, N. J.—*Cultivator.*—May 23, 1865.—In this invention an adjustable frame is combined with one adjustment for the tooth, and a separate adjustment for the shank, both adjustments being flexible when changing the position of the cultivator tooth, and rigid when the tooth is at work.

Claim.—First, the combination in a cultivator of longitudinal frame pieces, adjustable at both ends to cultivate any width of row, with an axle on wheels adjustable to any width of furrow, substantially as and for the purpose described.

Second, the combination of an adjustable frame, with one adjustment for the tooth, with a separate adjustment for the shank, when both are flexible when changing the position of the cultivator tooth, and rigid when the tooth is at work, substantially as and for the purpose described.

Third, the combination in the cultivator of one or more rigidly held teeth or ploughs, with an adjustable mechanism, substantially as described, whereby the driver can control at pleasure the operation of the teeth, singly or in series, as set forth.

No. 47,905.—GEORGE REHFUSS, assignor to the AMERICAN BUTTON-HOLE SEWING MACHINE COMPANY, Philadelphia, Penn.—*Sewing Machine.*—May 23, 1865.—This invention consists of a button-hole machine in which is employed an ordinary eye-pointed perforating needle, an eye-pointed loop carrier, which carries its own thread from beneath the table upwards through the button-hole, and above the cloth, and a notched arm which plays around the needle by means of a pin and spiral groove, and so catches the lower thread and spreads it beneath the point of the needle. Each thread-carrying device has a guard, one projecting below and the other above the table, the upper one serving to protect the lower needle, and also to prevent the edge of the button-hole opposite to that which is being worked from crowding over the opening, the lower one serving both to protect the upper needle and to deflect its loop to one side, so that the lower needle may enter it. There is also a novel arrangement of devices for delivering and taking up the slack of the upper thread.

Claim.—First, the arm I, with its notched projection *k*, or its equivalent, when arranged

to vibrate round the needle to operate on the thread held by the loop carrier *m*, substantially as described.

Second, the sleeve H, with its spiral opening *i* and arm I, in combination with the needle bar D and pin *f*, the whole being arranged and operating substantially as and for the purpose described.

Third, the guard *n* arranged on the plate L, in respect to the looper *m*, substantially as set forth, for the purpose described.

Fourth, the rod E and lever G in combination with the needle bar D and its spiral spring *a'*, the whole being arranged and operating substantially as and for the purpose set forth.

No. 47,906.—KARL SCHOU, assignor to himself and G. H. HULL, Lafayette, Ind.—*Surveying Instrument.*—May 23, 1865.—This invention relates to a surveying instrument which serves to record the distance between two or more points on the surface of the ground, and also to trace on a strip of paper the distance and the general formation of the ground between said points.

Claim.—First, a surveying instrument, provided with a wheel B, index *l*, cylinder E, and tracing device or pencil, substantially in the manner and for the purpose set forth.

Second, the method herein described of adjusting the speed of the paper cylinder according to the grade or formation of the ground over which the instrument is drawn, consisting of the pendulum weight J, carriage F, friction disk *t*, wheel *r*, and cog wheels *a y z*, or any equivalent means.

Third, the method of regulating the motion of the pencil or tracing mechanism according to the formation of the ground, substantially as herein set forth, consisting of the wheel *s*, friction disk *c'*, pinion *f*, cog wheels *g' i'*, and toothed rack *a'*, or any other equivalent means.

Fourth, the combination of the pendulum weight J, carriage I F, cog wheels *s r*, friction disks *c' t*, paper cylinder E, rack *a'*, with tracing device and index *k'*, all constructed and operating substantially as and for the purpose set forth.

Fifth, the elbow lever *o' o** in combination with the pendulum weight J and carriage F, applied substantially as set forth, so that a motion of the pendulum weight in either direction causes the carriage to move towards the centre of the wheel *r*.

No. 47,907.—ALBERT A. WILSON, Green Point, N. Y., assignor to himself and HOFFMAN ATKINSON, Rouseville, Penn.—*Coupling Shafts to Boring Tools.*—May 23, 1865.—This mode of coupling consists in forming a round hole in the end of one shaft and a tenon upon the end of the other, and inserting the latter into the former and fastening them thus by means of a key which is passed transversely through both. A hollow sleeve, slotted so as to permit the insertion of the key, surrounds the joint thus made, and which, after the key is inserted, is screwed up on one of the shafts so as to bring its slot out of line both longitudinally and transversely with the end of the key, thus preventing the latter from working loose.

Claim —First, providing the sleeve in connection with any two parts of the stem or shaft of tools, and arranging the same in combination with the key, substantially as and for the purpose described.

Second, the combination of the screw thread *g*, shoulder *e*, shoulder *a*, and sleeve C, in the construction of the coupling ends of well bored shafts or stems, substantially as and for the purpose herein described.

No. 47,908.—JAMES HODGES, of Penny Hill, Bagshot, England.—*Excavator.*—May 23, 1865; patented in England June 17, 1865.—This invention relates to a machine for excavating, and at the same time manufacturing peat for fuel, and it consists in the employment of devices and processes explained by the claim.

Claim.—First, the excavating of peat or other substance by means of rotating screw excavators, one or more arranged with shield and scraper, or their equivalents, all placed on or connected with a floating vessel, or a carriage mounted on wheels, substantially as described.

Second, the squeezer composed of the rotating cylinder, provided with pockets and a series of pressure rollers, or their equivalents, when used in connection with the screw excavator, for the purpose specified.

Third, the pulping machine, composed of the perforated diaphragms and revolving knives, arranged within a suitable case, to operate substantially as described.

Fourth, the combination of the screw excavators, endless elevators or carriers, squeezing device, and pulping mechanism, all arranged on or applied to a floating vessel, or a vehicle mounted on wheels, substantially as and for the purpose herein set forth.

No. 47,909.—ANATOLE A. HULOT, Paris, France.—*Printing Ink.*—May 23, 1865.—This invention consists in employing a composition of glue, honey, water, and glycerine, as a vehicle for the colors used, instead of the varnish or oil used in the manufacture of ordinary printing ink.

Claim.—First, the manufacture of typographic ink capable of being washed out when printed on movable adhesive and postage stamps, labels, or designs, requiring to be dated, signed, marked, or otherwise written upon with common ink, as hereinbefore described.

Second, the application of the said typographic ink to the printing of typographic or cop-

per-plate stamps of all kinds, either with delible black or with fast colors; and to relieve stamps with colored grounds and delible vignettes for envelopes to bank notes and other documents, where it is required to prevent the printing from being washed out.

Third, the application of the said typographic ink to imitate water-color pictures with one or more colors, and printed on paper or vellum, and also to printing in tinctorial colors on silk, cotton, wool, and other textile fabrics.

No. 47,910.—F. W. SHIELDS, Westminster, England.—*Telegraph Posts.*—May 23, 1865; patented in England October 6, 1864.—These posts are metallic, preferably of angle iron. Each post is in two parts—the one to be driven into the earth, and the other to be fixed upon the first and sustain the wire. The lower piece is pointed to facilitate its insertion in the earth. The lower end of the upper piece is secured to the upper end of the lower piece by means of screw bolts, rivets, or welding.

Claim.—The construction of telegraph posts of separate parts, one of which is suitable for being driven into the ground, while the other is provided with means for securing the insulator, and is suitable for being attached to the part in the ground, substantially as herein described.

No. 47,911.—HOSEA P. ALDRICH, Spencer, Mass., assignor to himself and GEORGE JENKS.—*Waxed-thread Sewing Machine.*—May 30, 1865.—The claim defines the nature of the invention.

Claim.—First, heating the pressure pad and cloth plate of a sewing machine, or either of them separately, by steam or otherwise, for the purpose of preventing waxed thread from sticking thereto while passing through the machine, substantially as and for the purpose specified.

Second, enclosing the tension wheel, or other tension device of a sewing machine, over which the waxed thread passes in a heated chamber or casing, for the purpose of preventing waxed thread, which passes around it, from sticking thereto, substantially as herein described.

Third, combining with the steam chest of the wax receptacle D, the casing which contains the tension wheels, substantially in the manner and for the purposes specified.

Fourth, the combination, with the wax receptacle D and its steam chest *a*, the pipes G O K, hollow pressure pad B, and hollow cloth plate C, substantially as and for the purposes specified.

No. 47,912.—HOSEA P. ALDRICH, Spencer, Mass., assignor to himself and GEORGE JENKS.—*Thread-waxing Device for Sewing Machine.*—May 30, 1865.—The chimney of a lamp is surrounded by a close water chamber formed within the wax box; this heated water keeps the wax in the fluid state; an outlet pipe from the water chamber permits the escape of steam or air; the rod guide, under which the thread passes to be immersed in the wax, is tubular, and thus allows the passage through it of a belt to secure the whole apparatus to a sewing machine; the wax thread passes out through a rubber or cork plug susceptible of any desired compression, for the purpose of depriving the thread of superfluous wax, and rendering it smooth.

Claim.—First, the combination of the wax receptacle A with the water tank D, water jacket E, and chimney C, substantially as and for the purposes described.

Second, attaching the wax receptacle to the sewing machine by passing a rod through the hollow tube I, which tube performs the function of a thread guide for immersing the thread under the surface of the wax, substantially as herein described.

Third, the combination of the tube L, India-rubber plug O, and screw M, substantially as and for the purposes described.

Fourth, making the India-rubber plug O convex at both its ends, in combination with socket of tube L, and that on screw M, substantially as and for the purposes set forth.

Fifth, the application to thread-waxing devices of the tube L, when constructed as and for the purposes described.

No. 47,913.—LEWIS J. ATWOOD, Waterbury, Conn.—*Shade Holder for Lamps.*—May 30, 1865.—This invention consists in fastening the springs by passing them through slots, and securing them by eyelets or rivets, and in combination therewith having the ring stiffened by corrugation.

Claim.—First, the combination of mortises and rivets, or eyelets, with the springs for securing the latter to the ring, as set forth.

Second, in combination with the springs for holding the lamp shade upon the chimney, the ring formed of thin sheet metal, stiffened by corrugations running around it, for the purposes and as specified.

Third, securing the exterior ring by projections from the springs, in the manner set forth.

No. 47,914.—ALBERT B. AUER, Babcock Grove, Ill.—*Compound for Removing Scale from Boilers.*—May 30, 1865; antedated April 27, 1865.—This invention consists of a composition of catechu, salt, saltpetre, and ground flax-seed.

Claim.—First, the compound herein described, composed of gum-catechu, salt, and saltpetre, substantially as and for the purposes specified.

Second, in combination with a compound for removing boiler incrustations, the employment of flax-seed, as and for the purposes herein described.

No. 47,915.—FREDERICK BALTZ, New York, N. Y.—*Desk.*—May 30, 1865.—This invention is set forth in the claim.

Claim.—The arrangement and combination of the levers B C and D, with the desk and cover of the desk, or table, and with the furniture, in such a manner that the opening or shutting of the cover or door will pull the desk outwards or inwards, substantially in the manner and for the purpose described.

No. 47,916.—JOHN M. BARTLETT, Harmer, Ohio.—*Potato Digger and Separator.*—May 30, 1865.—In this machine the potatoes are taken up by means of a scoop, and separated from the soil by an endless apron, from whence they are deposited upon a screen, where the small ones are separated from the large ones. The potatoes are delivered into a sack from the screens.

Claim.—First, the combination of the iron frame A2, scraper E, endless apron or chain F, main shafts G, spur H, with gearing, as stated, or their equivalents, by means of which the machine is made to dig and automatically separate potatoes, as set forth.

Second, the platform X, in combination with the chute Y, and sacking device X′, in the manner and for the purpose set forth.

No. 47,917.—CALEB BATES, Kingston, Mass.—*Apparatus for Appyling Paint to Stencil Plates.*—May 30, 1865.—This invention consists of a revolving brush, fed with color from a hopper or reservoir, carried on a truck made to travel over the stencil plate.

Claim.—First, the apparatus herein set forth, for applying paint or ink to stencils, constructed and operated substantially as above described.

Second, the plate I, for compressing the brush at the time it receives paint or ink from the hopper, substantially as above described.

No. 47,918.—G. W. BEARDSLEE, College Point, Long Island, N. Y.—*Coupling Conducting Wires.*—May 30, 1865.—In this invention, the two strands of wire, which it is desired to connect, pass through two disks of metal, which are placed face to face, and of hard rubber, in a tube, the wires of each strand being separated and spread out radially on the face of each disk. Between each disk and the top and bottom of the tube is placed a tube of vulcanized rubber, and a washer of metal, which, owing to the elasticity of the rubber, insure close contact of the disks. The tube is closed by a screw plug of rubber.

Claim.—For effecting the insulating coupling or union of electric conductors, the combination of the metallic disks, or the equivalents thereof, on the conductors, the coupling tube and nut, or its equivalent, and the elastic plug interposed between the metallic disks and the coupling tube and nut, substantially as and for the purpose specified.

No. 47,919.—HORACE BEERS, Brookfield, Conn., assignor to SMITH & BURHAM.—*Hay Spreader.*—May 30, 1855.—In this machine, the teeth are arranged spirally about a revolving head piece, one end of which has its bearing in a movable journal box, operated by a hand lever for throwing it in and out of gear. This construction, and the combination of several devices designated in the claim, constitute the invention.

Claim.—The employment of the revolving head piece D, provided with spirally-arranged teeth, in combination with the supporting pieces E E′, and with the movable journal box J, all arranged in the manner and for the purposes substantially as herein described and set forth.

Also, the arrangement and combination of the coil springs L, platform M, and lever K, in the manner and for the purposes substantially as herein described and set forth.

No. 47,920.—JOHN BOLES, jr., Boston, Mass.—*Bridge.*—May 30, 1865.—This invention consists in the construction of a truss-bridge, in such a manner that the braces stand in opposite directions, the divergence of which causes the overlap to be nearer together, at or near the bottom of the chord; also of a wire lacing, interposed between the posts, or vertical supports of the frame, to strengthen it.

Claim.—The combination as well as the arrangement of the lacing *b*, with the truss composed of the posts, top and bottom chords, braces and vertical tie rods, as specified.

Also, the construction of the truss with the arrangement of the several curved braces, and the several curved counter braces divergent with respect to each other, as described, whereby the crossings thereof are increased from the top to the bottom chord, as specified, and in combination therewith, the two tension wires or cables *c c*, arranged as specified.

No. 47,921.—JESSE BROCKWAY, Oswego, Ill.—*Sorghum Evaporator.*—May 30, 1865.—This invention consists of a pan, placed directly above the furnace, and divided into three compartments, by means of partitions. A heating pan is placed above the level of the pan, directly over the flue leading from the furnace to the chimney. The sorghum juice is heated

to boiling point in the heater, and then runs into the first division of the pan, by means of the conductor. From this division the juice is allowed to flow into the second, through the gate, and from thence in the third division to be finished. The temperature of the third division is regulated by means of a damper.

Claim.—First, in combination with an evaporator, the heater B, constructed and operated as and for the purpose specified, substantially as specified.

Second, in combination with an evaporator, the damper E, constructed and operated as and for the purposes specified, substantially as set forth.

Third, in combination with an evaporator having various compartments, the conductor C, when used as and for the purpose specified, substantially as set forth.

Fourth, in combination with an evaporator having various compartments, the gates D, constructed and operated as and for the purpose described.

Fifth, an evaporator, having sides that overlap the furnace upon which it rests, and extending down the outside thereof, for the purposes specified substantially as set forth.

No. 47,922.—Stephen P. Brooks, Somerville, Mass.—*Piano-forte Action.*—May 30, 1865; antedated May 21, 1865.—In this invention the hammer is balanced on a standard projecting from the key lever, with a peculiarly arranged back catch, &c.

Claim.—The combination of the hammer arm D with the standard C, and fly lifter F, in connection with the escapement on the rail G, substantially as and for the purpose specified.

Also, extending the hammer arm through and in the rear of the standard, in connection with the back catch H, for the purpose of holding the hammer after the blow is struck, as set forth.

Also, placing the back catch H, in the rear of the hammer arm, substantially in the manner and for the purpose specified.

Also, the combination of the standard C, upon the key lever B, the hammer arm D, the fly lifter F, with the button and spring, the escapement *g*, and the back catch H, substantially as shown and described.

No. 47,923.—H. C. Brown, Buffalo, N. Y.—*Damper for Stove Pipes.*—May 30, 1865.—Inside a stove pipe is an annular disk, suspended on an axis passing through the sides of the pipe; on either side of this disk is secured a hollow perforated cone, whose base is equal to the opening in the disk.

Claim.—The combination and arrangement of the annular disk C, and hollow perforated cones D D′, with the pipe A, substantially as and for the purposes herein specified.

No. 47,924.—Hiram Brown, Burton, Ohio.—*Washing Machine.*—May 30, 1865.—This invention consists of beaters that are grooved and curved on their under sides, and also in the mode of attachment and adjustment to the levers, by which they are operated.

Claim.—First, the beaters H, when constructed and arranged as herein specified, in combination with the ribs F, for the purpose set forth.

Second, the slotted arm H, in combination with the arm *p*, plate *n*, lip *p′*, and key *l*, when constructed and arranged in the manner substantially as and for the purpose set forth.

No. 47,925.—George C. Bunsen, Belleville, Ill.—*Blasting Rock.*—May 30, 1865.—This invention consists of a device, whereby a hollow space is left below a charge of powder, and between it and the bottom of a drilled hole in blasting, to the end that the explosive effect of the powder may be vastly increased, and that the labor and expense of tamping may be avoided.

Claim.—The application for blasting purposes of a disk *a*, when used either with a cylinder *d*, or support *c*, or in combination with both cylinder and support, substantially in the manner and for the purpose specified.

No. 47,926.—Wm. H. Burkhart, Bucyrus, Ohio.—*Harvester.*—May 30, 1865.—To the reel post near its top is attached the upper end of an elastic steel bar. From this point of attachment the steel bar extends downward to near the bottom of the reel post, and at its lower end it makes a short upward curve, so as to form a step. Upon this step is a pulley box with two pulleys arranged to swivel. The chain which turns the reel passes from the wheel attached to the main pulley, thence under the two pulleys on the steel bar before mentioned, and thence to the pulley attached to the reel shaft. The design is, that the elastic steel bar shall yield to the motions of the machine, keep the chain on the wheel, and not allow the chain to slacken so as to stop the revolution of the reel, or tighten it so as to break the chain.

Claim.—First, arranging the spring 1, so that it is pendent from near the reel shaft upon the reel post, and so that it supports the pulleys 5 5 near the lower end of the reel post, in the manner and for the purpose described.

Second, the arrangement of the pendent spring 1, swivelling pulleys 5 5, reel shaft 3, pulley 4, and driving chain or cord of the reel, in the manner and for the purpose described.

No. 47,927.—W. B. Burtriett, New York, N. Y., and J. P. McIntosh, Brooklyn, N. Y.—*Whitewash Brush and Handle Attachment.*—May 30, 1865.—This invention consists in securing a brush handle to a hemispherical portion, which is attached to the brush-stock in such a manner that the brush can be adjusted and secured rigidly at any desired angle, with respect to the handle, or removed from the handle at pleasure.

Claim.—First, securing a handle to a brush by means of a screw fastening, which is applied to the rounded portion D, constructed substantially as described.

Second, the adjustable section C, having a screw formed on it, in combination with a hemispherical slotted speed D and ferrule B, substantially as described.

No. 47,928.—SAMUEL CAMERON, Pittsburg, Penn.—*Die for Spike Machine.*—May 30, 1865; antedated May 17, 1865.—The two metallic blocks, which form the main portion of this die, are each made hollow, to allow water to be introduced into them for the purpose of keeping them cool. The abutting surfaces of the two blocks, instead of being plain, as is usual in dies of this character, are each rebated longitudinally to a depth equal to the diameter of the spike, and extending rather more than half-way across its surface, and the two are placed with the shoulder of one lapping over that of the other and resting upon the bottom of the rebate, leaving thus between the two rebated surfaces in one direction, and between the two shoulders in the other direction, a longitudinal opening corresponding in shape to that desired for the spike, which is to be square for a portion of its length immediately below the head, and concave upon each of its four surfaces the balance of its length, excepting the point. In the end of one of the blocks is arranged what is called a "clip," upon which the point of the spike is formed, which clip may be removed at pleasure and substituted by another, so as to give any desired shape to the point of the spike, and at the same time cheapen the construction and repair of the die.

Claim.—The use of dies for spike machines made to overlap each other, each having two convex operative faces at right angles to each other, one such face being horizontal and the other perpendicular, for the purpose of making spikes with fluted shanks, substantially as described.

Also, the use of a removable clip for forming the point of the spike, so constructed, as hereinbefore described, as that its operative face may be ground down, from time to time, whenever it may be necessary to dress off the head of the die, so as to compensate for the reduced length of the die, and thereby obviate the necessity of using new dies when the head end of the die becomes worn, substantially as hereinbefore set forth.

Also, the use of dies for spike machines having plain operative faces for a short distance below the head of the spike, and convex operative faces elsewhere, for the purpose of making a fluted spike with the square neck, substantially as described.

No. 47,929.—J. R. CARR, Ellenville, N. Y.—*Grapnel for Wells.*—May 30, 1865.—This invention consists of a cylindrical case, within which is a movable disk, to the periphery of which are fixed the ends of numerous flat springs, whose tension is toward the centre of the cylindrical case. A spiral spring is situated between the aforesaid disk and the top of the cylindrical case. The instrument is used in the bottoms of artesian wells to recover broken tools. The disk is drawn up against the spiral spring so as to compress it and is then allowed to be driven by the spring downward, whereupon its flat springs embrace any tool that may come in their way firmly enough to pull it up with them as they are withdrawn.

Claim.—The grapnel above set forth for recovering fragments of metal and other refractory substances from the bottoms of wells, constructed and operated substantially as described.

No. 47,930.—JOHN CHILCOTT, Brooklyn, N. Y.—*Boot and Shoe Sole.*—May 30, 1865; antedated May 19, 1865.—This invention consists of a compound sole, formed of an outer sole of India-rubber or gutta percha, and an inner sole of leather; the latter having a projecting margin for the purpose of attaching the sole to the boot or shoe.

Claim.—As a new article of manufacture a compound sole, composed of an inner sole of leather and an outer one of India-rubber or gutta percha, united by sewing or other means, with a projecting margin of leather, consisting simply of a portion of the inner sole, substantially as herein set forth.

No. 47,931.—JOHN CHILCOTT, Brooklyn, N. Y.—*Mash Tun.*—May 30, 1865; antedated May 15, 1862.—The mash tun is provided with strainers, which are closed by sliding gates. A trough or basin extends nearly around the mash tun, and is provided with a discharge tube near its bottom. After the mashing operation, the wort is drawn off through the strainers into the trough, leaving the husks in the mash tun.

Claim.—The collecting trough or basin C, strainer *d d*, and gates or shutters D D, in combination with each other and with the mash tun, substantially as and for the purpose herein specified.

No. 47,932.—JOHN B. COCHRAN, Brooklyn, N. Y.—*Slide Valve.*—May 30, 1865.—This invention consists in communicating the motion of the rod to the valve through the medium of a vibrating lever made fast to the valve at its lower end, while the upper end is free to vibrate between two stops placed upon a rod which runs through the steam chest above the valve rod and parallel with it. This rod has a right and a left hand screw cut upon it, and the stops above referred to are fitted to it in such a way that upon revolving the rod the stops are made to approach or recede from each other, thus regulating the motion of the

upper end of the lever and the point at which the valve shall cut off steam from the cylinder.

Claim.—First, the combination of the valve stem C with the lever G whose lower end is pivoted to the back of the valve, and whose upper end is movable, so that the fulcrum, by means of which the valve is moved to and fro, is a movable one for each throw of the valve, substantially as above described.

Second, the combination of the rod H and its nuts *e e*, operated as set forth, with the lever G, substantially as described.

No. 47,933.—ISAAC E. CRAIG, Cleveland, Ohio.—*Steam Generator.*—May 30, 1865.—This invention consists in the combination of the generator with a blower and pipes, through which the steam passes from the generator through the boiler to the space below the grate, and in which it is so far decomposed as to afford the requisite amount of oxygen for the support of combustion. The blower receives its motion from the engine, and steam is admitted to it directly from the generator, and is forced into the pipes leading to the furnace by the piston placed in the cylinder of the blower.

Claim.—First, the pipes D and E, when in combination with the boiler and furnace, as and for the purpose herein set forth.

Second, the blower C, when in combination with the pipes D and E, together with the boiler and fire-box, substantially as set forth.

No. 47,934.—AMORY DAVIDSON, Clinton, Mass.—*Washing Machine*—May 30, 1865.—This invention consists in the peculiar manner in which the legs of the beaters are constructed to give them a reciprocating motion.

Claim.—The slots J J and K K in the legs G G, in combination with the shaft L and wheels P P, substantially as and for the purpose described.

No. 47,935.—BIRAM C. DAVIS, Herkimer, N. Y.—*Tack Driver.*—May 30, 1865.—This invention consists of an inclined plate serving as a hopper, by which the tacks fall into an inclined guide open at the bottom which causes the tacks to fall with their points downward. Two dies direct the tacks, and a slide forces a tack under the driver, which is held up by a spring. A stroke from a mallet on the driver sets the tacks in the place intended for them, very rapidly.

Claim.—First, the descending incline plate A and guide B, as shown and for the purpose described.

Second, the driver C, slide D, bent arm E, dividing slide F, expanding dies H H, the whole being arranged substantially as described and for the purpose set forth.

No. 47,936.—JOHN DAVIS, Alexandria, Va., *Steam Pressure Gauge.*—May 30, 1865.—The object of this invention is to register the pressure of steam within a steam generator with unerring certainty, irrespective of the increase or diminution of heat to which the steam pressure gauge may be exposed. It also consists in the combination of a pendulous weight with a steam-pressure gauge, and the arrangement of the pendulous weight, piston, rack, cog wheel, sector, toothed wheel, bracket, and roller.

Claim.—First, the pendulous weight J, when used in combination with the steam pressure gauge, and getting into the gauge, the method being unnecessary to describe, it being a well known one adopted in all similar cases. These will be seen at the lower end indications of such packing.

Second, the combination and arrangement of the pendulous weight J, piston F, rock G, cog wheel M, sector L, toothed wheel O, bracket N, friction roller H′, substantially upon the principle and in the manner as herein set forth.

No. 47,937.—J. P. DAVIS, Middletown, Conn.—*Moulding Core.*—May 30, 1865.—This invention consists in constructing the skeleton or frame around which the sand core is moulded with a flange at each end, which fills the core box, and which flange has attached to it a handle for the purpose of lifting and removing the core when formed.

Claim.—A skeleton arbor for green sand core, constructed with supporting plates *a a* and handles C C, arranged as herein specified.

No. 47,938.—B. A. EARL, Media, Penn., and HENRY HOLCROFT, Philadelphia, Penn.—*Apparatus for Oiling Wool.*—May 30, 1865.—In this apparatus the shaft has such a motion as to carry over and immerse the wire gauze for a short time in the lubricating material, and then permit it suddenly to fly back and strike with its arms against the edge of the trough, and thus sprinkle the oil upon the wool or the endless feed band.

Claim.—The combination of a box or reservoir B containing lubricating material with a shaft F, carrying a strip of wire gauze, or its equivalent, and having the within-described movement imparted to it by the devices herein described, or the equivalents to the same, for the purpose specified.

No. 47,939.—HORACE EVERETT, Philadelphia, Penn.—*Metal Cans or Boxes.*—May 30, 1865.—This invention consists in forming the hook joint in constructing cans in such a manner that instead of the projection caused thereby being on the outside, as in the ordinary way, its outer surface is made even with the periphery of the cylinder or body of the can.

Claim.—A metal can or box having a body secured by a lap joint, the projection formed by which is arranged on the inside of the can, as and for the purpose herein set forth.

No. 47,940.—Moses G. Farmer, Salem, Mass., and George F. Milliken, Boston, Mass.—*Line Wires for Telegraphs.*—May 30, 1865.—The nature of this invention is explained by the claim.

Claim.—As a new article of manufacture a telegraph wire, re-enforced for the purpose of strength with a core or cover of iron or steel, the wire being made by drawing a compound bar of the two metals.

No. 47,941.—R. B. Fitts, Philadelphia, Penn.—*Process for Treating and Compounding Marl.*—May 30, 1865.—This invention consists in treating night-soil with sulphuric acid and mixing the mass with marl. The whole is then allowed to remain undisturbed for a few days, and then salt cake, animal charcoal, and gas lime are added, and the mass is thoroughly dried and packed in sacks for use.

Claim.—First, the employment of sulphuric acid in combination with night-soil for acting upon the marl, substantially in the manner described and for the purpose specified.

Second, in combination with the marl, night-soil and acid, treated as described, the addition of the salt cake, gas lime, and animal charcoal, substantially in the proportions and manner described and for the purpose specified.

No. 47,942.—Philo M. Gilbert, Kewanee, Ill.—*Gang Ploughs.*—May 30, 1865.—In this invention the parallel and adjustable plough frame rests upon and is pivoted at the end of a rectangular frame upon the axle. This plough beam moves laterally on the axletree by means of a rack, pinion wheel, and lever, and is lifted out of the ground by bent levers connecting with a treadle.

Claim.—First, the combination and arrangement of the plough beams D D, the connecting adjustable straps *f f*, and the removable pivoted connection Z, with the tongue O, as and for the purposes herein specified and described.

Second, the combination of the plough beams D D, the jointed lever I J, the supports H, the lever F, and the standard E, arranged and operating substantially as and for the purpose specified and shown.

Third, the combination of the plough beams D D, the reciprocating beam C, the rear support N, and the tongue O, pivoted to said beams, arranged and operating as and for the purposes shown and set forth.

Fourth, the combination of the plough beam D D, reciprocating beam C, the axle A, provided with the slots *a a*, the bolts *b b*, rack *c*, pinion wheel *d*, and lever *e*, arranged and operating as and for the purposes specified.

No. 47,943.—Samuel N. Goodale, Cleveland, Ohio.—*Steam Brakes for Rail Cars.*—May 30, 1865.—This invention consist of steam cylinders placed underneath the central portion of each car, each of the cylinders being provided with two piston heads and rods, to which are attached the rods that operate the breaks. Steam is conveyed to these cylinders through a pipe which passes from the engine and runs directly beneath them and is joined to them by a swivel joint. The steam on entering the cylinder passes between the pistons and forces them apart, and by this means the breaks are applied to all the wheels of the car to which the cylinder is attached. A flexible coupling is provided for connecting the pipes at the point where the cars are coupled together.

Claim.—First, the arrrangement of the steam cylinder B, placed within or beneath the centre of each car, and having double piston heads C C′, with guide rods E and E′ attached to their rods for operating the brakes G, substantially as specified.

Second, coupling the pipes I by means of the hollow pistons K working through stuffing boxes I′, as described.

Third, connecting the hollow pistons K by means of flexible tubes, as specified.

Fourth, the arrangement of the pipes I and stop-cocks O, for the purpose specified.

No. 47,944.—Sylvanus S. Gould, Worcester, Mass.—*Cloth Dotter.*—May 30, 1865.—This invention consists of an instrument like a fountain pen, composed of a pointed tube, containing a spring valve rod, which allows the flow of ink or die on pressing the point.

Claim.—First, the combination with the body A of the valve rod B, caps C D and valves *d b*, substantially as and for the purposes set forth.

Second, the combination with the caps C and D of the spring *a* and packing *b*, substantially as set forth.

Third, the combination with the valve rod B of the point *h*, and supporting tube *c*, substantially as set forth.

Fourth, making the lower end of the valve rod B with a series of grooves *f*, for the purposes set forth.

No. 47,945.—George D. Greenleaf, Three-mile Bay, N. Y.—*Stove Pipe Drum.*—May 30, 1865.—Within the drum are four vertical partition plates, forming five flues, which com-

municate with each other and their collars by openings at their ends. By means of deflecting plates on the top or bottom of the vertical plates, in connection with the damper at the top, and one at the bottom, moved by the same rod, the circulation can be diverted around the drum, or by opening the dampers a direct draft may be obtained through the central flue.

Claim.—The combination in heat radiators for stoves of the drum A, flues a' a'' a''' a'''' a''''', arms *d d*, and rod D, substantially as and for the purposes set forth.

No. 47,946.—Charles Lee Griswold, Chester, Conn.—*Augers.*—May 30, 1865.—This invention consists in providing double-twisted augers, with pointed floor lips having the spurs and screw for bases, and the points operating on a shorter radius than the spurs.

Claim.—The pointed floor lips, substantially as described.

No. 47,947.—John Habermehl, Wheeling, West Virginia.—*Fire Grates.*—May 30, 1865.—In this invention the fireplace above the grate is in the form of a section of a sphere, with its front edge in a plane, inclined relatively with the fire grate; on the top and concentric with the front edge of the upper part of the fireplace is a semicircular sliding damper, pivoted at its extremities; the bars of the grate are curved inwardly at their centres, the curvature increasing from top to bottom.

Claim.—First, a fire space C, above a fire grate A, having its wall in the form of a section of a sphere, with its front edge in a plane inclined relatively with the fire grate, substantially as and for the purpose set forth.

Second, the semicircular sliding damper D, pivoted at its extremities to the forward part of the wall *b*, and adjusted by the rod *e*, substantially as and for the purposes set forth.

Third, constructing the fire grate A, with curved bars arranged so as to form an inclined front, substantially in the manner as and for the purposes set forth.

No. 47,948.—John W. Haines, Somerville, Mass.—*Manufacture of Silvered Glass Ware.*—May 30, 1865.—This invention consists in rendering the space between the walls of silvered glassware air-tight, by covering the aperture leading thereto with a metallic stopper, and securing said stopper with cement.

Claim.—The stoppering of the hole on the bottom of double glassware, silvered with a metallic stopper, as herein described.

No. 47,949.—Emery E. Hardy, New York, N. Y.—*Harness.*—May 30, 1865.—This invention consists in a channel running under the terretts and check hook through which the tug strap may pass, and be free to slip endwise; also in a slotted plate attached to the skirt of the saddle, having a slide working in it, and in constructing the skirts of the saddle with a metal shell, having wooden edges to which the lining may be tacked.

Claim.—First, the plate A, constructed in the form and manner shown, and connected to the other parts as herein set forth.

Second, in combination with plate A, the blocks B and B′, when so arranged as to form the channel for the strap C, and otherwise constructed as described.

Third, the copper plate E when constructed and fastened in place, as shown and described.

Fourth, the slotted plate *e*, screw *h*, and nut *f*, or their equivalents, when constructed and arranged to operate as and for the purpose set forth.

Fifth, the method of securing the terrett F, as shown, whereby an open space or channel is left underneath it for the strap C.

Sixth, the self-adjusting back strap, when arranged to operate in connection with the other parts, as herein shown.

Seventh, in combination with the strap C, the slotted plate *e*, clamp *f* and *i*, and screw *h*, constructed and operating substantially as described.

Eighth, the hook C, provided with the square shank U, and used in combination with the bolt l' and crupper plate *t*, as and for the purposes herein set forth.

No. 47,950.—Axel Hayford and Ambrose Strout, Belfast, Me.—*Hay Press.*—May 30, 1865.—This invention is limited to the specific arrangement of the ropes and pulleys, and will be understood from the claim and engravings.

Claim.—First, the combination and arrangement of the follower, toggle lever, and two cords, with the capstan, in the manner substantially as and for the purposes set forth.

Second, the combination of the door, catch bar, and a single button with the frame, when arranged substantially as and for the purpose set forth.

Third, the combination of the lever R, the end lining O, and wedged braces P and Q, with the box B, substantially as described for the purposes set forth.

No. 47,951.—S. S. Hemenway, Boston, Mass.—*Clothes Wringer.*—May 30, 1865; antedated May 19, 1865.—This invention consists in the employment of strengthening bars, uniting the upper ends of the screw bolts, and resting in longitudinal grooves on the upper surface of sockets, whereby the latter are prevented from turning or twisting.

Claim.—An improvement on the clothes wringer patented by Sylvanus Walker, June 17, 1862.

Also, the employment of the cross-slat J, in combination with the detached grooved sockets D D, and screw bolts E E, substantially as set forth and for the purpose described.

No. 47,952.—Wm. Hosier, Washington Township, Ind.—*Churn.*—May 30, 1865.—This invention consists in the employment of dashers and guides, moved vertically by a cog wheel and pitman. The dashers move in guides similar to those of a new frame, moved in the same way.

Claim.—The foam-dash *h*, in combination with the guides *x x* and lower dashes *w w*, when said dashes are arranged as described, and operated by means of the devices attached to one-half of the lid *e*, as set forth.

No. 47,953.—Frederic Howes, Boston, Mass.—*Crupper.*—May 30, 1865.—This invention consists in combining an extension bar, for the purpose of supporting the tail of a horse, and in making the bar adjustable, so that it can be held at any desirable angle with the crupper.

Claim.—Combining with a crupper an extension-bar or piece for the purpose of raising and supporting the tail of a horse, as set forth.

Second, making the supporting bar adjustable, so that it can be set and held at any desired angle with the crupper, as set forth.

Third, the combination of the ratchet ring, extension bar and spring pall, as described.

No. 47,954.—C. Jillson, Worcester, Mass.—*Wire-Pointing Machine.*—May 30, 1865.—In this device, the hollow mandrel of a lathe is supported in a head which is capable of a laterally vibrating movement, and which has upon it a guide arm projecting over the shears longitudinally, and upon this arm is a sliding guide or rest, through an opening in which passes the end of the wire to be operated upon. The head, with the wire inserted and secured in the mandrel, is adjusted at such an angle to the stationary cutter, that when it is fed forward longitudinally, the wire comes in contact therewith, so as to have given to it the taper required.

Claim.—First the combination with the adjustable stand C, which supports the wire shaft, the swinging arm F, cutter stand I, and hanger or wire support G, whereby the latter is connected with the cutter stand, but moved laterally as the wire is fed forward, substantially as and for the purpose specified.

Second, combining the cutting and holding devices in a wire-pointing machine, with the stand which supports the wire, in such a manner that the machine can be used for simply pointing wire, or for pointing and cutting off the pointed pieces, substantially in the manner described.

Third, the combination of the pivoted stand which supports the hollow wire staff with the sliding table B, for the purpose of adjusting the taper of the wire to be pointed, substantially as and for the purposes specified.

Fourth, securing the wire within its hollow shaft, by application of a slotted eye piece *o*, substantially in the manner and for the purposes specified.

Fifth, the combination of the cutter and stand for supporting the wire in a wire-pointing machine, in such a manner as that the cutter remains stationary during the operation of pointing the wire, substantially as described.

Sixth, the combination of mechanism in a wire-pointing machine, in such a manner as to cause the wire that is being pointed to recede from or approach the cutter, by a simple movement of the standard which holds the wire to be pointed in a line parallel with the ways or base of the machine, substantially as herein described.

Seventh, the combination with arm F, of sliding hanger G, for supporting the wire, substantially as set forth.

Eighth, the combination with arm F, of hanger G, slotted arm K, and guide *u*, substantially as set forth.

No. 47,955.—C. Jillson, Worcester, Mass.—*Machine for Pointing Wire.*—May 30, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—First, in combination with the hollow wire shaft, the extension grade frame E, sliding block G, and self-adjusting supporting eye *d*, substantially as and for the purpose specified.

Second, the combination with the cutter *s*, the supporting sleeve *r* for adjusting and feeding the cutter, as and for the purposes specified.

Third, the combination with the guide block G, and supporting eye *d*, of the yielding and self-adapting weight H, substantially as set forth.

Fourth, the combination with the arched frame E, of the guide block G, and supporting eye *d*, as and for the purpose set forth.

Fifth, the combination of the circular bed piece P and table O, for supporting the cutter stand R, substantially as and for the purposes set forth.

Sixth, the combination with the table A, of the bed piece P, table O, and operating lever M, substantially as and for the purposes specified.

No. 47,956.—Lewis W. Johanning, jr., San Francisco, Cal.—*Wire Cutting Machine.*—May 30, 1865.—This invention consists in attaching to one of the sides of a quadrant-shaped

bed plate, a machine for cutting the wire, said wire being fed between the cutters, and guided along the circular or curved edge of the bed plate by a flange thereon, to which a gauge is attached, which determines the length of wire to be cut.

Claim.—The combination and arrangement of the plank or platform A, with the stationary cutter C, vibrating cutter D, cam lever F L, curved guide G, and gauge H, the whole constructed as described for the purpose set forth.

No. 47,957.—Paul W. Keating, Norwich, Conn.—*Composition for Blacking Leather.*—May 30, 1865.—This invention consists of neat's-foot oil, lampblack, and white wax.

Claim.—The composition of matter, of the ingredients, in the proportions and mixed in the mode above described.

No. 47,958.—George D. Kellogg, Troy, N. Y.—*Shoulder Strap Slide.*—May 30, 1865.—This invention consists in slotting each of the shoulder straps attached to the waist belt, which cross upon the back of the shoulders. A stud passes through both slots, without being attached to either, so that it adapts itself to the point of crossing, wherever the motion of the body may bring that point.

Claim.—Connecting the straps with each other at the point where they cross upon the back, in the manner and for the purpose substantially as set forth.

No. 47,959.—D. A. King and V. N. Gardner, Livingston, Ky.—*Attaching and Detaching Tops of Vehicles.*—May 30, 1865.—The top of a vehicle of this description is attached to a removable piece in the carriage seat, running lengthwise thereof, and confined in its place in the seat by buttons. When it is desired to remove the top, it is only necessary to turn back the buttons, when the removable piece in the seat to which the top is attached may be removed without difficulty. A false bottom is provided under the removable piece, which may be raised to the level of the latter when it is removed, so as to leave no break in the seat.

Claim.—The mode herein described of attaching the top of vehicles to the movable piece *d*, resting on the false bottom *e*, and sustained by the bearers *f*, and with the movable piece *d*, held in position by the buttons K K, or their equivalents, all constructed and operated as above described and for the purposes set forth.

No. 47,960.—Adolph Koehler, Holyoke, Mass.—*Saddle-tree.*—May 30, 1865.—This invention consists in casting the tree in one piece, said tree being provided with a recess for the plate to fit in; which plate has a rein hook at its front end, and at the other a loop to receive the back strap. Two screws secure the saddle to the tree; one from above the former, the other from beneath the latter.

Claim.—Casting the saddle-tree in one piece, with a recess *a* in its under side, in connection with the plate B to fit in the recess *a*, and having the check-rein hook *e* at its front end, and the loop *b* to receive the breechen or back strap at its near end, and the two screws D E to secure the saddle C and plate B to the tree, substantially as set forth.

No. 47,961.—Robert H. Lecky, Allegheny City, Penn.—*Jar for Oil Tools.*—May 30, 1865.—This invention consists in furnishing jars for well-boring tools with slides or guides for preventing the surging, wabbling, crooking, and straining action on the points, and which is so common in jars now used.

Claim.—The use of the guides E and C, when used in connection with "jars" for oil tools, said guides being arranged and operating substantially as herein described and for the purpose set forth.

No. 47,962.—Robert Lee, Cincinnati, Ohio.—*Sash Fastening.*—May 30, 1865.—In this device a spring latch is pivoted upon the top of the lower sash. The eye of the sash is slotted towards the handle, and the latch is also made hollow between the handle and the pivot. A spiral spring is inserted, so as to bear against the end and the pivot. Upon the opposite sash is arranged a catch, behind which the turned-up end of the latch passes, and is held fast by a shoulder on the catch. When it is desired to release the latch, the handle is pushed inward against the spring.

Claim.—The arrangement of spring latch F and catch J, with their described or equivalent accessories, the whole being combined and operating to form a secure sash lock, sub stantially as set forth

No. 47,963.—Joseph Leeds, Philadelphia, Penn.—*Furnace.*—May 30, 1865.—This invention consists of flat smoke flues, a connecting fire chamber, and exit pipe, the orifices in the fire chamber opening in these flues being the whole of the inner diameter of said flues, and in the exit pipe smaller, and of different diameters.

Claim.—Connecting together the fire chamber and the escape flue chamber of furnaces or stoves for air heaters by means of the series of flat smoke or gas flues C C, the said flues being constructed and arranged substantially in the manner described and set forth, for the purpose specified.

No. 47,964.—Frederick Killer, Baltimore, Md.—*Tobacco Pipe.*—May 30, 1865.—This invention consists of a curved tube of soft metal, made so large as to serve as a condensing

chamber, having on its upper surface the bowl, and on the end furthest from mouth-piece is a cap, by unscrewing which and withdrawing the mouth piece, the tube can be cleaned with facility.

Claim.—The above described smoking pipe, as a new article of manufacture.

No. 47,965.—Wm. K. Lewis, Boston, Mass.—*Soldering Iron.*—May 30, 1865.—This invention consists in applying a shield to a common soldering iron, made of a piece of tubing large enough to slip over the iron, and which, after the iron has been heated, is screwed upon a nut arranged upon the end of the handle next the iron, to protect the hand from the heat.

Claim.—A shield applied to a soldering iron, in the manner substantially as shown and described.

No. 47,966.—F. A. Lord, Aurora, N. Y.—*Evaporator.*—May 30, 1865.—This invention consists of a boiler and vat, the boiler being connected to the vat by pipes. The vat is provided with one or more partitions.

Claim.—In evaporating liquids or fluids of any kind, the combined use of a tight or open boiler and an open circulating vat or vats, the two connected by pipes so that the fluid may continuously flow or circulate through the boiler, and through the vat or vats, substantially as and for the purpose herein described and represented.

No. 47,967.—Hosea Low, Waukou, Iowa.—*Machine for Cutting Sheet Metal.*—May 30, 1865.—This invention consists in the employment of two pairs of rotary cutters, in combination with a clamp D, made in such a shape that the part which clamps the sheet passes by one pair of cutters, and the other part holds the gauges, the clamp being secured to a rod, which is adjustable in a swivel, inserted in a slide in such a manner that the sheet to be cut can be easily adjusted to the desired position, and two segments of two concentric circles of any desired diameter can be cut out simultaneously. It is also provided with a squaring frame, having a gauge by which the sheets may be held, so as to cut any bevelled shape desired.

Claim.—First, the employment or use for this purpose of any single stationary frame, or of two frames, with the open ends pointed in the same direction, in either case, with two pairs of cutters, whether the frame or frames or the cutters be adjustable towards the working centre, or the centre adjustable towards the cutters, and especially if the cutters are so placed in relation to the centre or swivel that a right line drawn through the cutting points of contact between the cutters will pass through the working centre in any position of adjustment, substantially as herein set forth.

Second, the clamp D and radius bar *c*, constructed in such a manner as to lengthen and shorten at the centre and the part that clamps the tin so formed as to pass by one pair of cutters or between two pairs of cutters, in combination with any stationary frame or frames, with one or two pairs of cutters, and with or without the gauges, substantially as and for the purpose described.

Third, the gauge *k*, provided with a longitudinal slot *l*, in combination with two oblique slots *m* in the squaring frame E, constructed and operating substantially as and for the purpose specified.

No. 47,968.—Thomas Main, Greenpoint, N. Y.—*Steam Boiler.*—May 30, 1865.—The boiler is vertical. The combustion chamber surmounts the fire chamber. The flues conduct the products of combustion from the combustion chamber down to the bottom of the boiler, and thence to the top of the boiler, passing through the water space and heating the water, and also passing through the steam chamber, and thus superheating the steam.

Claim.—The combination in a vertical steam boiler of the fire chamber B, the enlarged combustion chamber C, surmounting the said fire chamber and surrounded by a water space, the descending flues *f*, and ascending flues *g*, passing through the said water space, and the upper flue space *e*, surrounding the steam dome *d*, all as herein described.

No. 47,969.—W. C. McGill, Cincinnati, Ohio.—*Hoisting and Lowering Weights.*—May 30, 1865.—This device contains an automatic check for preventing any retrograde movement in hoisting weights. This check consists of a spur wheel, surrounding which is an annulus with interior cogs, which take in those of the spur wheel. While the weight is rising, the annulus is concentric with the spur wheel, and communicates the motion of the spur wheel (which receives motion from the crank) to the hoisting drum. When the motion of the crank ceases and the weight begins to exert a retroactive force, the hoisting drum throws the annulus out of its concentricity with the spur wheel, so that the teeth of the former and latter become interlocked, and prevent any retrograde motion.

Claim.—First, the mechanical movement composed of the parts A B C E I and J, or their equivalents, the whole being combined and operating substantially as set forth.

Second, the combination of the spider I, and annulus J, constructed and operating as set forth.

No. 47,970.—J. H. Merrill, Quarqueton, Iowa.—*Sorghum Evaporator.*—May 30, 1865.—This invention consists of an evaporator divided into two compartments by means of a par-

tition. The compartments are divided by partitions, and communicate with each other by means of openings near the bottom, which is inclined so that the guide will be deeper than where it enters the pan, at alternate ends. The cane juice flows from the pan into the space between, then into the space to the left of one compartment, then into another compartment. From this latter compartment it flows through into another compartment, passing through apertures, in each partition, and is finally discharged.

Claim.—The pan N, in combination with the evaporator D, the whole constructed and arranged as and for the purpose substantially as herein set forth.

No. 47,971.—G. V. MOONEY, New York, N. Y.—*Barometer.*—May 30, 1865.—This invention consists in constructing the case of a barometer of such length as to admit of the insertion of a timekeeper in the top of it, to impress upon the mind of the observer the time of the occurrence of atmospheric changes.

Claim.—The use of the new article of manufacture, designated the "fine registering barometer and thermometer," made substantially as described and for the purposes hereinbefore set forth.

No. 47,972.—HERMANN MUND, Chicago, Ill.—*Snap Hook.*—May 30, 1865.—This invention consists in providing the hook with a snap, working on a pivot, with a spring bearing upon it. The spring keeps the snap in contact with the end of the hook, and the snap is provided with a thumb piece to admit of its being readily operated upon.

Claim.—A snap D for a hook, provided with or composed of three arms *b c d*, arranged with a spring E within the shank B, and pivoted to the shank, in the manner substantially as and for the purpose set forth.

No. 47,973.—MARTIN NEWMAN, Unadilla, N. Y.—*Edge Plane.*—May 30, 1865.—This invention consists in a guard or diagonal knife, in combination with the blade stock, which is attached to the shank-piece by means of a set screw, so that the knife stock can be moved up and down. This knife slides in grooves in the knife stock, and is secured by means of set screws.

Claim.—The construction of an edge plane with the guard *c*, and the diagonal knife D, in combination with the stock A, substantially as and for the purpose herein set forth.

No. 47,974.—ROBERT S. NICKERSON and JAMES WALLACE, Philadelphia. Penn.—*Hat.*—May 30, 1865.—In this invention, large meshes are made in woven cloth, by withdrawing certain threads, and this exterior is laid upon a more rigid body, also perforated.

Claim.—As an article of manufacture, a hat made of cloth, having meshes substantially as described, and a perforated hat body.

No. 47,975.—C. NORWOOD, Bloomington, Ill.—*Combined Cultivator and Seeder.*—May 30, 1865.—In this machine the seed-box and covering roller are placed upon levers pivoted at the rear end of the machine, and are adjustable vertically. The opening runners are pivoted to the front of the machine, and fastened to and adjustable vertically with the seed-box. A separate frame of cultivating ploughs is adjusted within the first, when required.

Claim.—First, the bars E E, provided with the seed-boxes H H, and rollers G, and pivoted at their rear ends to pendants F at the back part of the framing A, in connection with the bars L L, pivoted at their front ends to the pendants M at the front part of the framing A, and provided at their rear ends with the coulter projections *b*, and the forks *a**, and connected to the seed-boxes H by the links *g*, all arranged substantially as and for the purpose herein set forth.

Second, the arrangement of the bent pivot bars I I, seed-boxes H H, and connecting bars T, substantially as and for the purpose herein specified.

No. 47,976.—S. R. PARKHURST, assignor to EMILY R. PARKHURST, Bloomfield, N. Y.—*Means for Feeding Wool and other Fibrous Material to Picking, Carding, and other similar Machines.*—May 30, 1865.—In this invention the feed cylinder is toothed, the vibrating comb besides cleaning the cylinder, is also cleaned by it, and it carries a rising and falling shell or shelf, which catches and returns to the burring cylinder any locks of fibre which fall from it. Instead of a licker in, and for the purpose of obtaining room for a larger number of workers and strippers, the first stripper is placed contiguous to the burring cylinder, and transfers the wool directly from it to the main carding cylinder.

Claim.—First, the combination of a vibrating comb with a toothed cylinder, for removing wool and other fibre and foreign substances from the teeth of said cylinders, and also cleaning the teeth of said comb, substantially as specified.

Second, the feed rollers *b* and *c*, in combination with the vibrating comb, substantially as specified.

Third, the combination of a feeding cylinder *b*, vibrating comb *c*, and burring cylinder *d*, for the purposes and substantially as specified.

Fourth, the combination of a shell with the vibrating comb and toothed cylinder *b*, for the purpose and substantially as specified.

Fifth, the heads *f f*, connecting bars *g*, and eccentrics, in combination with the vibrating comb, and cylinders *b* and *d*, as set forth.

Sixth, the combination of the burring cylinders *b m*, and strippers *l* and *n*, with the feed cylinder *b*, and vibrating comb *e*, substantially as specified.

Seventh, the combination of the burring cylinder *m*, the stripper *p*, the worker *q*, and the carding cylinder *o*, substantially as specified, whereby the stripper *p* transfers the fibre from the burring cylinder to the carding cylinder, as set forth.

No. 47,977.—Wm. Patterson, Salem, N. J.—*Road Scraper.*—May 30, 1865.—The scraper is made concave on its face side, and arranged in its bearings so that it can be readily caused to tilt over, discharge its accumulated load, and slide smoothly over it; also in an arrangement of one or more wheels just in advance of the said scraper, and back of the tongue, so that the rear end of the latter and its connections may be supported; in making the bar which connects the tongue and scraper together, in the form of a curve, so that the line of draught may be readily varied in relation to the face of the said scraper. A small carrying wheel or runner is arranged at each end of the scraper, so that its upper edge may be supported above the surface of the ground after it has been tilted over.

Claim.—First, a road scraper, having its scraper proper A, made in the curved form, and arranged obliquely to the line of draught, as described and set forth, the said scraper A being supported in its place by means of arms *c*1 *c*2 bent downward behind, and hinged or looped to the back of the said scraper A, as described, so as to allow the latter to tilt forward from its upright position before the arms, when required, as and for the purposes described.

Second, the arrangement of the adjustable notched lever *f*, in combination with the curved bar C, and scraper A, as and for the purposes specified.

Third, the curved connecting bar C, when arranged in combination with the tongue D and scraper A, so as to be adjustable at its connection with the said tongue, substantially as described for the purposes specified.

Fourth, the arrangement of the carrying wheels E E, or their equivalents, in combination with the scraper proper, A, substantially in the manner described for the purpose specified.

No. 47,978.—Robert E. Paterson, jr., Philadelphia, Penn.—*Glass Presser Feet of Sewing Machine.*—May 30, 1865.—In this device, the edge of the cloth guide plate, which guides the edge of the cloth, is permitted to pass under a portion of the presser foot, and thus admit of sewing the narrowest tucks, the guide lying in close proximity to the needle.

Claim.—The glass presser foot, with its longitudinal recess, adapted to receive the edge of the guide plate, substantially as described.

No. 47,979.—C. E. Phillips, Abington, Mass.—*Rolling Pin.*—May 30, 1865.—This rolling pin is provided with an internal receptacle to contain a nutmeg grater, and a pastry cutter. One end of the rolling pin is made of tin or other metal, and is detachable, so as to serve for a circular cutter to give shape to biscuits. To this removable end is attached a handle, also of tin or other metal, so formed as to receive a wooden handle. The tin handle is used for cutting holes in cakes, and the wooden handle for smoothing and scalloping pastry.

Claim.—First, forming a rolling pin at one end or through its whole extent hollow, or with a suitable aperture or receptacle for receiving such implements as are generally used in the manipulation and ornamentation of pastry, &c.

Second, combining with the rolling pin a removable handle, which will also serve as a cutter, as described.

Third, the combination and arrangement of the removable handle and cutter *f f*, with the pastry smoother *h h*.

Fourth, the combination of the rolling pin *a a a*, nutmeg grater *c c*, and biscuit cutter *f f*, as described.

No. 47,980.—Daniel Prest, Marlborough, N. J.—*Horse Rake.*—May 30, 1865.—This rake is of the class in which the head rests upon the ground, and the teeth project forward therefrom. Two hand levers project upward from a bar in front of, and parallel with the head. When it is desired to discharge the collected load of hay into the windrow, the upward projecting levers are drawn backward, and thereby the teeth are raised into the air to a sufficient distance to bring the load in contact with the clearer fingers, by means of which it is brushed off the teeth and deposited. The teeth may then be returned again to the earth.

Claim.—The combination of the levers E E with the bar D, clearers D′, and teeth A′, the whole being arranged to operate substantially as herein described.

No. 47,981.—Wm. A. Reilly, Cincinnati, Ohio.—*Lathe Chuck.*—May 30, 1865.—This device consists of a chuck, from the face of which, at right angles, on two opposite sides, projects a stud or standard, through each of which, radially to the face of the chuck, passes a screw, the inner end of each of which forms a centre or pivot, on which the mandril holding the nut to be squared or faced is secured centrally to the axis of the chuck. A dovetailed groove across the face of the chuck, at right angles to the mandril, admits a corre-

sponding shaped tongue, attached to the bottom of and guiding a sliding carriage, from the surface of which, near one end, projects a movable standard, the angle of which can be adjusted to suit and be pressed against one side of the nut to prevent its turning with the mandril, while the side of the nut parallel to the face of the chuck is being turned off by the cutter secured in the sliding rest, in the ordinary way.

Claim.—The above described lathe chuck, provided with the slide H, arm I, and slide K, with the adjusting screws M and L, substantially in the manner and for the purposes set forth.

No. 47,982.—R. Reynolds and Charles Young, Stockport, N. Y.—*Horse Hay Forks.*—May 30, 1865.—This invention consists in combining with two hinged tined jaws, two levers for toggle arms, which are straightened out, the jaws being closed and locked in such position; and, also, in placing the hoisting ring out of the centre of the fork, so that the strain upon the hoisting rope will facilitate the opening and closing of the fork.

Claim.—First, the toggle joint and lever D D, in combination with the hinged jaws B B′ of the fork A, constructed and operating in the manner and for the purpose substantially as herein shown and described.

Second, the ring C, when the same is arranged on one side of the centre of the fork, and operates in combination with the toggle arms D D and jaws B B′, substantially as and for the purposes set forth.

No. 47,983.—D. E. Rice and Wm. Everett, Detroit, Mich.—*Tube Sheet Cutter.*—May 30, 1865.—This invention consists of a vertical mandril formed at its lower end into a centre or point, upon which it rests or turns when in operation. Upon the lower part of the mandril, and fitting closely thereto, slides longitudinally a sleeve, on the lower end of which is a cross-head, in longitudinal vertical slots in each end of which the cutters are secured and made adjustable to or from the centre, by means of set screws, to suit the different sized holes required. The diameter of the upper end of the sleeve is enlarged sufficiently to allow a screw to be cast thereon, which runs into a nut, constituting an elongated hub of a thumb feed-wheel, the latter secured and turning upon the mandril by means of a collar thereon near the upper end. An inward projecting stud or pin in the sleeve fits in a longitudinal groove in the mandril, and causes the two to revolve together, and allowing a free vertical motion upon the mandril.

Claim.—The sleeve B, arranged to carry the cutters or tools in combination with the spindle A, sleeve B, and hand-wheel C, constructed and operating substantially as and for the purpose described.

Also, the combination of the revolving rest E, with the spindle A, sleeve B, and hand-wheel C, constructed and operating substantially as and for the purpose described.

No. 47,984.—D. C. and L. S. Riggs, Omaha City, Nebraska.—*Sugar Press.*—May 30, 1865.—This press consists of a metallic box of suitable strength, with perforated sides, so that the molasses expressed from the crude sugar, for which this press is designed, may escape and be collected outside of the box. After the pressure has been carried to a sufficient length, a wedge in the platform, upon which the press box stands, directly beneath the box, is withdrawn, and the sugar, divorced from the molasses it formerly contained, falls through the opening into a box below.

Claim.—The combination of the pressing box F, base block D, and bottom wedge I, constructed and arranged to operate substantially as described.

No. 47,985.—Henry M. Rulon, Monmouth, Ill.—*Car Coupling.*—May 30, 1865.—This invention consists in coupling railroad cars together by a single connecting pin, in connection with peculiarly constructed drawheads, so arranged that they are coupled automatically.

Claim.—First, the coupling pin C, when constructed and operating substantially as and for the purpose set forth.

Second, the combination and arrangement of the coupling pin C, the weight D, and the draw-head A, when all constructed and operating as herein delineated and set forth.

Third, the combination of the draw-head B with the coupling pin C, constructed, arranged, and operating substantially as and for the purpose herein specified and shown.

No. 47,986.—Silas C. Salisbury, New York, N. Y.—*Apparatus for the Manufacture of Gas.*—May 30, 1865.—This invention consists of an apparatus for making gas from petroleum. The hydro-carbon is placed in the reservoir, from whence it is conducted by a pipe to the vaporizer. From this vessel it passes to the retort, which is divided into two compartments, the lower one of which is filled with lime or zinc. The vapor passes first through the upper compartment, and then through the lower one, by means of which it is converted into a fixed gas. The gas then passes through the upper compartment, and then through the lower one, by means of which it is converted into a fixed gas. The gas then passes through the tube to the washing vessel, a current of air produced by the blower being forced into the machine along with the gas through the tube. The pipe enters the vessel at the

side and is extended along the bottom in a perforated coil. The vessel is supplied with water through a pipe, and the gas escapes from a perforated coil and passes through the water and enters a chamber. From this chamber it passes to the purifier, which is filled with lime, through the perforations, and from thence through the pipe to the regulator. It then passes down the pipe into the cooler, which is divided by a vertical partition, in the form of a coil. This chamber is partly filled with water, and the gas, in passing over the surface of the water, is cooled and then led to the gas holder.

Claim.—First, the combination of the washing and purifying chambers and automatic regulator, so that the gas passes through them in succession, substantially as described.

Second, the arrangement of the washing and purifying chambers and automatic regulator described, so that they constitute one apparatus, substantially as and for the purposes set forth.

Third, the combination of the washing and purifying chambers and automatic regulator with the cooling chamber, substantially as and for the purposes set forth.

Fourth, the combination of the cooling chamber, constructed substantially as described, with a retort for the production of fixed gas.

Fifth, the purifying chamber C, constructed substantially as described and for the purposes set forth.

Sixth, the combination of the movable vessel or gas receiver *d* with the faucet in the supply pipe 2^a, connecting the vaporizer 2 and retort 3, so as to constitute an automatic regulator of the supply of the vaporized products of the vaporizer to the retort, substantially as and for the purposes set forth.

Seventh, the combination of the movable vessel *d* with the stop-cock of the air-supply pipe, so as to constitute an automatic regulator of the supply of air to the gas, substantially as described and for the purposes set forth.

Eighth, a washing chamber, constructed substantially as described—that is to say, of a vessel in the lower part of which is a conduit for gas, perforated with numerous small holes, so that the supply of gas is finely divided and compelled to enter the water in numerous small jets, substantially as and for the purposes set forth.

Ninth, the combination of a washing chamber, so constructed with an apparatus for producing a current of air to cause the gas to more certainly be passed through the water, substantially as described and for the purposes mentioned.

Tenth, the combination of the cooling chamber, constructed as described, with the washing and purifying chambers, and also with the naphtha fountain, substantially as set forth, so that it can be used as a cooling chamber, and also as a naphtha reservoir or chamber in the production of fixed or vapor gas, substantially as set forth.

No. 47,987.—Matilda Saviers, Wyandott, Ohio, administratrix of the estate of M. Saviers, deceased, and W. N. Ayers, Bristolville, Ohio.—*Corn Planter.*—May 30, 1865.—In this machine, the seed slide is operated by a cam wheel on the draught axle, and thrown back into place by a spring on the end of the slide.

Claim.—The reciprocating slide K, provided with the projections *d d'*, arranged to work in relation with the perforated bottoms of the seed boxes J, in connection with the cam M, bar L, and spring N, all arranged substantially as and for the purpose specified.

No. 47,988.—Frederick H. Schroeder, Bushnell, Ill.—*Corn Sheller.*—May 30, 1865.—This device consists of a stop valve, provided with flexible flanges, and placed where the corn passes from the shelling to the winnowing device.

Claim.—The employment of the stop valve S, provided with flexible flanges, when constructed and operating substantially as herein described.

No. 47,989.—Jacob Seibel, Manlius, Ill.—*Gang Plough.*—May 30, 1865.—By means of a lever, roller, and chain, both the front and rear ends of the plough beams may be raised or lowered simultaneously, and thus the ploughs may be readily adjusted to cut furrows of any desired depth. They may also be readily raised up during the operation, for the purpose of avoiding obstructions. If desired, the front end of the plough beams may be lowered first.

Claim.—The combination of the seat I, fulcrumed at J, perforated standard M, the spring K, provided with the pin *a*, the lever L, or its equivalent, for operating said spring and pin, the rod N, and plough beams P, arranged and operating substantially as and for the purposes herein specified and shown.

No. 47,990.—Jacob Seibel, Manlius, Ill.—*Corn Planter.*—May 30, 1865.—In this device, two circulating rotating cutters are placed in the rear of the runner, at an angle of 40° to each other.

Claim.—First, the combination of the cutters *x x*, and runners P, arranged and operating substantially as and for the purposes herein shown and described.

Second, the combination and arrangement of the cutters *x x*, the runners P, jointed at the front end, the cross-bar N, standards R, levers H, cross-bar I, and standard J, operating as and for the purpose delineated and set forth.

No. 47,991.—N. S. Shaler, Newport, Ky.—*Air Cooling Apparatus.*—May 30, 1865.—This invention consists of a case containing a series of cells, so arranged as to form a tortuous passage. The chambers are filled with ice, and air or gas is caused to circulate through the passage, by means of a fan.

Claim.—The apparatus, substantially as explained; that is, consisting of the series of cells, the tortuous passage, and the propeller, or the equivalent thereof, arranged in manner and so as to operate as and for the purpose specified.

No. 47,992.—William Slatter, Alleghany City, Penn.—*Ambulance.*—May 30, 1865.—This invention consists in making a two-wheeled ambulance, or carriage, which will overcome the jolting motion of the horse, by attaching the thills to the underside of the axle, and bracing said thills and axles by running braces from the centre of the springs to the thills.

Claim.—Attaching the thills to the underside of the axle, and bracing the thills and axle together by braces running from the centre of the springs to the thills, constructed, arranged, and operating substantially as herein described and for the purpose set forth.

No. 47,993.—Joseph Slusser, Cincinnati, Ohio.—*Boring Jar.*—May 30, 1865.—This invention consists in making a jar for well boring tools self-clearing at every stroke, so as to prevent particles of rock, or other extraneous matter, from forcing open or spreading the members of the joint.

Claim.—The mode of constructing a well-boring jar, of two pairs of quarter-round bars or sectors, confined to each other by sleeves, and closing each other's interstices in the act of sliding together, substantially as set forth.

No. 47,994.—Wm. F. Smelley, Vevay, Ind.—*Farm Gate.*—May 30, 1865.—This invention consists of a diagonal brace or truss, pivoted at its lower end, and moving upon a ratchet, at its upper edge, for the purpose of elevating the gate frame, when it has become sagged.

Claim.—The combination of the rack H, with the pivoted truss G, and gate A B C F, substantially as and for the purposes set forth.

No. 47,995.—John W. Smith, Iowa Point, Kansas.—*Corn Harvester.*—May 30, 1865.—This invention consists in combining with sled runners a movable platform, which is operated by means of a pawl and rack under the control of the driver, said platform being constructed in two parts, hinged to each other, so that when the platform is thrust forward the front end will slide up an inclined plane at the front of the sled, and also in combining with a guide a reel constructed with sloping arms that are capped, and which is free to rotate in one direction by the pressure of the stalks, but is prevented from rotating in the other, by a self-acting ratchet and pawl.

Claim.—First, in combination with the sled runners, the movable platform B, operated substantially in the manner described.

Second, making said platform in two parts, with front end hinged to the main body of the platform, and arranged to move up or down the inclined plane H, in the manner shown and described.

Third, the rule G, constructed substantially as described, and revolved by the pressure of the stalks upon its arms, when used in connection with the guides, for the purpose specified.

No. 47,996.—Henry Stanley, Troy, N. Y.—*Rotary Digger.*—May 30, 1865.—In this machine, two parallel endless chains composed of split links rotate upon wooden drums resting on shafts that are adjustable on the frame. The entire frame is raised with the turning of the bent axle; this axle is turned by the pawls operating on a small cog wheel, that meshes into a toothed segment. A locking device holds the machine firmly at any required depth. The digging teeth are socketed into the split links forming the endless apron.

Claim.—First, the combination of the H-formed *g*, with the tooth links *f*, provided with lugs *h*, all being constructed as specified.

Second, having the ends of the teeth made of conical form when fitting into corresponding-shaped sockets in the links, substantially as described.

Third, the lips *k* to prevent the turning of the teeth, substantially as described.

Fourth, the employment of one or more intermediate shaft supporters H, in combination with the chain rollers, substantially as herein described.

Fifth, the employment of the toothed segment O, in combination with the wheels L, substantially as described.

Sixth, the combination of the lever by which the digging teeth are raised and lowered with the driver's seat, substantially as described.

Seventh, the pawls S T, in combination with the lever R, and ratchet Q, substantially as described.

Eighth, the employment of a locking device V, or its equivalent, in combination with the raising mechanism, substantially as and for the purpose described.

Ninth, the employment of an adjustable driver's seat, in combination with one or more endless chains of digging teeth, substantially as described.

Tenth, the combination of the cranks N N, with the rear roller, substantially as described.

Eleventh, the employment of the raising lever, in combination with the segment, or its equivalent, substantially in the manner herein shown and described.

Twelfth, the adjustable handle of the raising lever, in combination with the raising lever and adjustable driver's seat.

No. 47,997.—JOHN STARK, Waltham, Mass.—*Lathes.*—May 30, 1865.—This invention consists in the method of operating the spring clamping jaws or chuck, and is effected by means of a female screw or nut, working upon and over the head of the mandrel, forcing outward a sliding cylinder, (which is contained in a circular recess in the head of said mandrel,) by means of a collar thereon, the periphery of which extends in front of the thumb-screw. This sliding cylinder surrounds the conically-shaped jaws or chuck, and its outward motion causes the chuck to close.

Claim.—The combination, as well as the arrangement, of the sliding contractor D′ and its operative mechanism E and *l*, with the tubular arbor A and the clamp C, having the cone *c*, and being fixed to the arbor so as to operate therewith, substantially as described.

Also, the combination of the chamber *h* and the socket *e* with the tubular arbor A, tubular clamp, and its contractor D, provided with screws E and *l*, constructed, combined, and arranged substantially as set forth.

No. 47,998.—JAMES STEPHENSON, Canandaigua, N. Y.—*Time-keeper.*—May 30, 1865.—This invention consists in an escapement by which friction between the detent and the scape wheel is decreased, and regularity and ease given to its motion. The construction and arrangement of the parts will be evident from the claim and engraving.

Claim.—First, a detent, consisting of a cylindrical block D′, formed with a rim *d*, and adapted to operate in connection with a balance wheel F, to regulate the escape wheel, substantially as and for the purpose set forth.

Second, communicating motion from the detent to the balance wheel, and *vice versa*, through the medium of a segmental rack E′ and pinion F′, substantially as and for the object specified.

No. 47,999.—T. P. THORPE, New York, N. Y.—*Exercising Machine.*—May 30, 1865.—In this invention a balance beam is regulated by adjusting springs, so as to exercise children of unequal weight.

Claim.—The springs P P, or their equivalent, combined with the walking beam, marked C, and the shaft N, together with the post B, for the purpose herein described.

Also, the device, as a new article of manufacture, as above described, for the purpose herein intended and described.

No. 48,000.—WM. I. TOWNE, Newton, Mass.—*Grate.*—May 30, 1865.—This invention consists in suspending the journals of the grate on rollers.

Claim.—Suspending the journals *b* of the grate on rollers *d*, substantially as set forth for the purpose specified.

No. 48,001.—A. E. and I. V. WARNER, Norwalk, Ohio.—*Sawing Machine.*—May 30, 1865.—This invention consists in providing an arrangement of devices, where both a circular and reciprocating saw can be used for cross-cut sawing at the same time.

Claim.—The above described arrangement of the cross-cut and circular saws, when operated substantially in the manner and for the purposes set forth.

No. 48,002.—THOMAS UREN, New York, N. Y.—*Artificial Arm.*—May 30, 1865.—The artificial arm is secured to the body by means of straps passing over the back and under the other arm, and a wing extending in front of the shoulder, without any strap passing across the chest. A cord is attached at one end to the upper arm, and passing thence through the forearm and hand is attached to the thumb and forefinger in such a manner that by depressing the hand, so as to bring the forearm in line, or nearly so, with the upper arm, the forefinger and thumb are opened, while by a forward movement of the stump of the natural arm, the forearm is elevated, and the thumb and forefingers closed. When it is desired to hold the fingers in a partially closed position, that object is effected by means of a cord attached to the fingers at one end, and at the other to a pin upon the outside.

Claim.—The arrangement of the straps for securing the artificial arm to the body and on the stump of the upper amputated arm, without any strap passing across the chest, in combination with the wing of the upper artificial arm, extending in front of the shoulder, substantially as and for the purpose specified.

Also, the means herein described for holding out the covering of the open part of the artificial arm, at the junction of the upper and lower arm, and in combination therewith, substantially as and for the purpose specified.

Also, connecting the turning wrist-piece with the forearm by a turning flute joint, in combination with the two cords attached to the cross-bar in the wrist-piece, and hitched to the forearm and on opposite sides thereof, substantially as and for the purpose described.

Also, the cord which is attached to the upper arm, and passes through the forearm and hand, and is attached to the thumb and forefinger, to open the thumb and finger by simply depressing the hand, so as to bring the forearm in line, or nearly in line, with the upper arm, in combination with the cord to elevate the forearm and close the thumb and finger by a forward movement of the stump of the natural arm, substantially as and for the purpose described.

Also, in combination with the hinged fingers, the employment of a cord or cords attached to the fingers, and which can be hitched to a pin or its equivalent outside, to hold the fingers in a partially closed position, substantially as described.

No. 48,003.—JOHN WEITZEL, Mott Haven, N. Y.—*Locking and Stopping Window Blinds.*—May 30, 1865.—This invention consists in attaching levers or arms, by means of dovetailed grooves therein, to one end of the slat. On the outer ends of each arm is a pin projecting at right angles from the side thereof, and passing through a rod, which answers the purpose of the ordinary slat bar. The inner side of this rod is notched, and a spring dog attached to the stile of the frame catching in said notches serves to hold the slats in any position required.

Claim.—First, the spring catch E and notched rod D, applied in combination with each other, with the stile A and with arms C, or their equivalents, at one end of the slats, and operating substantially as herein specified.

Second, the pivot arms C, each cast of one piece, with its respective pivot *c*, and with a dovetail groove in one side, substantially as herein described, to enable it to be secured to the slat without nails, screws, or other fastenings.

No. 48,004.—GEORGE WASHINGTON WICKS, New York, N. Y.—*Boring Machine for Artesian Wells.*—May 30, 1865.—This invention consists in constructing the operative parts of drilling machinery so that a drill shall retrace its cutting, and cut a vertical circular hole, and that all the machinery may be drawn out of line of the drill without disturbing it.

Claim.—First, the apparatus described, when constructed substantially as shown, for imparting to the drill the alternate vertical and rotary motions, as described.

Second, spur gear *c*, with its rods or framework and the slide piece *x*, in combination with the tripper D and drill Z, operating together substantially in the manner and for the purpose described.

No. 48,005.—LEWIS E. WILLIAMS, Peekskill, N. Y.—*Explosive Shell.*—May 30, 1865.—In this invention the shell is provided interiorly with walls forming radial recesses, and dividing the interior into separate chambers, each of which is designed to contain its own bursting charge. On the first explosion of the powder on the radial recesses, the shell is ruptured into segmental shells, which afterwards explode independently.

Claim.—A series of radial chambers extending from a common central chamber to the inner perimeter of the shot, for the purpose of dividing the interior of the shot into a series of separate and distinct chambers to contain explosive material, substantially as described.

No. 48,006.—D. H. WISWELL and GEORGE W. SHAW, Buffalo, N. Y.—*Drill for Boring Oil Wells, &c.*—May 30, 1865.—This invention consists in constructing an automatic rotating drill, with which to commence from the surface of the ground and drill to any required depth. It also consists in providing a means by which the ropes operating the drill may be kept taut, so as not to be twisted.

Claim.—First, the rotating frame H, in connection with the cross-head F, uprights *e e*, guides *r* and *m*, pawl and ratchet *j j*, substantially as herein described.

Second, frame H, in combination with pawl N and ratchet M, all constructed and operating in the manner specified.

Third, an automatic rotating drill, constructed and arranged substantially as herein set forth.

No. 48,007.—AUGUST WITTNEBEN, New York, N. Y.—*Sewing Machine.*—May 30, 1865.—This invention relating to the feeding lever, which is above the table, turns on a universal joint; its rear end passes through an opening in a fixed frame having a central hub, about which, and supported by it, revolves a driving wheel or ring, on whose inner sides are several cam projections, which, in revolving, operate on pins, which slide easily in holes in the hub, and thus act upon the end of the feed lever to give the required movement. Means for adjusting the length of feed are also provided. The feed dog screws vertically into the other end of the lever, and may thus be adjusted in height.

Claim.—First, the employment and use of a revolving wheel F, with internal cams acting through movable pins, the lever E, in the manner and for the purpose substantially as described.

Second, the arrangement of the lever E, moving on a universal joint, and combination with the feeding pad I, and operated by the wheel F and the spring rod W, or its equivalent, in the manner as specified.

Third, operating the needle bar P from the end of the lever E, by means of the lever M and rod N, in the manner substantially as set forth.

Fourth, the arrangements of the plate V, on the end of the lever E, for the purpose of regulating the amount of feed, operating substantially in the manner specified.

Fifth, the application of the feeding pad above the material operated upon, when arranged and operated substantially as described.

Sixth, the combination of the revolving ring F, with internal cams, the pins *a' b' c'*, lever E, feeding pad L, spring rod W, lever M, rod N, and needle bar P, when arranged and operating in the manner and for the purpose substantially as set forth and specified.

No. 48,008.—J. P. WOODBURY, Boston, Mass.—*Street Steam Railroad Car.*—May 30, 1865.—The boiler is vertical, and arranged upon the centre of the forward circular platform. The engines are vertical, and placed one on each side of the boiler. The connecting and valve rods pass down through the platform, and connect below it with the driving-crank shaft. The locomotive thus built is combined with a car, so as to form a "dummy." The circular platform carrying the boiler and engines is supported by means of springs upon the truck frame. Both the front and rear ends of the car are supported upon circular truck frames, and between the car and said frames are radial rollers, so as to enable the car to turn sharp curves.

Claim.—First, the combination of the gear wheels C C' (or cranks and rods, as shown in figure 7) on the axles E E, with the crank shaft Y, and pinion B', and vertical boiler S, and engines U U, when constructed and operating in the manner and for the purposes described.

Second, the combination of the friction clutches M' M' N' N' with one or more pinions B and L, and gear wheels C' C' and K' K', in the manner and for the purpose set forth.

Third, the rack W, and pinion V, when combined with the circular platform I, in the manner and for the purpose herein described.

Fourth, the stop-pins *a a*, and bolt *b*, in combination with the platform I, in the manner and for the purpose herein set forth.

Fifth, connecting the driving shaft Y rigidly with the circular platform I, by means of the hangers H' H', when constructed and arranged in the manner and for the purpose herein set forth.

No. 48,009.—G. M. WOODWARD, New York, N. Y.—*Air Pump.*—May 30, 1865.—In this invention an arrangement is made to force air into, or exhaust air or gas from a well or reservoir, by the operation of the same cylinder and piston, at option, by changing the position of two cocks on the top of the pipe cylinder.

Claim.—The air pump D, provided with adjustable or reversible valves *b b*, in combination with a receiver A, the latter communicating with the air-pump, and provided with an eduction tube B, and all arranged substantially as described.

No. 48,010.—JOHN S. ADAMS, Taunton, Mass., assignor to himself and WILLIAM C. DODGE, Washington, D. C.—*Compressing Cartridges around Bullets.*—May 30, 1865.—In this invention it is designed to firmly attach cartridge cases made of paper, or other fibrous material, to Minie bullets, by closely compressing the forward overlapping edge of the cartridge around the grooves of such bullets; it also consists of jaws fitted to the groove of such bullets, connected by bent levers, and operated by a lever handle; an adjustable head or plug receiving the point of the bullet, so as to gauge it accurately to the position of the crimping jaws.

Claim.—First, the jaws or levers C and D, constructed and operating substantially as and for the purpose herein set forth.

Second, connecting the jaws C and D, by the arm *a a*, and strip E, or their equivalents, for the purpose of securing a positive uniformity of motion in the two, by means of one handle.

Third, the shield or plate F, or its equivalent, for the purpose of preventing any lateral movement of the jaw C, and prevent it from being bent laterally, by operating the handle.

Fourth, the cartridge-case rest *n*, to insure the union of the ball and case on the same axial line.

Fifth, the adjustable plug H, arranged as described, for the purpose of adapting the machine to bullets of different lengths.

Sixth, the stop-pin *e*, in combination with the recess or slot, for limiting the movements of the jaws C and D.

Seventh, the washers *i*, in combination with the jaws and face plate B, as and for the purpose set forth.

No. 48,011.—J. A. BASSETT and O. C. SMITH, Salem, Mass., assignors to OLIVER BENNETT, Boston, Mass.—*Air Injector.*—May 30, 1865.—The object of this invention is to inject air into and through burning fuel by means of a current of steam, which is adjustable in its volume. It consists also in the construction of adjustable openings, through which to inject air by means of jets of steam.

Claim.—The injection of air through adjustable openings, constructed as described, into and through burning fuel, by means of the force of a jet of steam used direct from the boiler, or superheated, as may be required.

No. 48,012.—WILLIAM H. BECHTEL, assignor to himself and B. H. BARTOL, Philadelphia, Penn.—*Boring Wells.*—May 30, 1865.—This invention consists in the use of elliptical or oval cog wheels, in combination with the bar or rope used in boring artesian wells, and with its equivalent, for releasing and seizing said bar or rope; it is also designed to obtain, by the aid of elliptical wheels, a differential reciprocating motion for economizing power, and saving time in boring artesian wells.

Claim.—The use, substantially as and for the purpose described, of elliptical or oval cog wheels, in combination with a well-boring bar or rope, and with the mechanism described, or the equivalent to the same, for seizing and releasing the said bar or rope.

No. 48,013.—JOHN BOLES, jr., assignor to G. W. & F. SMITH, Boston, Mass.—*Bridge.*—May 30, 1865.—This invention has reference to what are termed "lattice trusses," or those which have diagonal braces and counter braces crossing one another so as to form quadrilateral openings at the crossings of four such braces. The invention consists in uniting two straight braces, or a straight brace and a counter brace, by curved or arched connections to be fastened to the chord at the union of such braces. It also consists in a combination of a series of diagonal struts with the braces and counter braces, and their quadrilateral openings.

Claim.—The combination of the series of arch connections *a a a*, the stright braces and counter braces, and their chord or chords, the whole being arranged substantially as set forth.

Also, the combination of the series of diagonal upright struts E E, with the system of braces and counter braces, and their chords, the whole being arranged substantially as specified.

No. 48,014.—DANIEL CAMPBELL, Elizabeth, N. J., assignor to HENRY SEYMOUR, New York, N. Y.—*Cutter for Bread, Meat, &c.*—May 30, 1865.—This cutter is provided with two screws, one in each end, which pass through parallel oblique slots in a frame. By means of a lever attached to one end of the knife, a horizontal and downward drawing motion is communicated to the knife. The material to be cut is placed upon a carriage, and to this carriage is attached a slide, which is impinged upon by one of the screws of the cutter in its reciprocating motion, and thus made to give sufficient motion to the carriage.

Claim.—First, the application of the knife D to parallel oblique slots C C, in frame B, in connection with the lever F attached to the knife frame B, all arranged to operate substantially as and for the purpose set forth.

Second, the slide K, arranged in connection with the knife D, lever J, pawl I, and rack *e*, on carriage G, to operate substantially in the manner as and for the purpose herein set forth.

No. 48,015.—THOMAS CROSBY, Bridgeport, Conn., assignor to AMERICAN WATER-PROOF CLOTH COMPANY, Brooklyn, N. Y.—*Manufacture of Water-proof Fabrics.*—May 30, 1865.—This invention consists in forming a water-proof fabric, by cementing fine felt or woven fabric to a coarse woven fabric, by means of India-rubber, or other vulcanizable gum. The face may be corrugated by means of rollers, so as to imitate Brussels carpet, or the surface may be napped in imitation of velvet carpet. The surface thus prepared can be dyed or printed in the ordinary manner, or the felt may be colored before it is applied, if desired.

Claim.—As a new manufacture, a fabric formed by the combination of a coarse, textile material for a base, with a finer textile material, or with fibrous material, in the form of a bat or felt, a face, united by a coating or sheet of India-rubber, or other gum, or compounds thereof, in the manner and with the result and for the purposes set forth.

Also, as a new manufacture, the fabric having a back or base of flax, cotton, jute, wool, or other textile material, coated or covered with a sheet of India-rubber, or other vulcanizable gums, or the vulcanizable compounds thereof, and having a face of fibrous substances in the form of a bat or felt, or of other textile material, combined and united by pressure, and by the vulcanization of the gums, and dyed and printed, or colored, or stamped, or embossed, for the purposes and in the manner described and set forth.

No. 48,016.—WILLIAM L. DUFF, Quincy, Ill., assignor to HENRY C. BANKS.—*Paper Collar.*—May 30, 1865.—This invention consists in a collar, having its lower part slitted, so that the portion at the back will pass outside of the cravat, and secure it in its place.

Claim.—A collar, having its lower part slitted, so that portions at the back will pass outside of the cravat, in the manner and for the purpose substantially as set forth.

No. 48,017.—SAMUEL F. GAMAGE, assignor to himself and N. M. DOW, Boston, Mass.—*Pipe Tongs.*—May 30, 1865.—In this device, the fulcrum pin is adjustable in a longitudinal slot in one of the jaw levers, and from one side of the head of said pin projects, at right angles thereto, a shank or arm, threaded to form a screw, which lies partly in and longitudinally with the slot. Against a shoulder, formed by a socket at the outer end of the slot, for the reception of the outer end of the screw, abuts a milled nut, surrounding the screw, and operating thereon, which by turning, moves the fulcrum, so as to enable the jaws to be adjusted to suit pipes or tubes of different sizes.

Claim.—The solid screw and fulcrum, designated respectively by the letters *f g h i*, as operated by the milled nut E, applied and arranged in the opening and slot in the stationary jaw lever, substantially in the manner and for the purposes above specified.

No. 48,018.—SAMUEL Z. HALL, Camden, N. J., assignor to himself and GEORGE MOTT, Hoboken, N. J.—*Self-centring Punches.*—May 30, 1865; antedated May 16, 1865.—This invention consists in applying to a centring clamp a hinged box or guide, through a hole in the collar on the top; in this is inserted a hollow cylinder, in which plays the vertical centre punch, the point of which rests on, and whose axis is in line with, that of the bolt or bar held, to be centred in the clamp.

Claim.—First, the arrangement of the guide-socket F, which contains the centre punch within a hinged frame, applied in combination with the box, or its equivalent, which contains the centring clamp, substantially as and for the purpose herein set forth.

Second, the arrangement of the guide socket within the said hinged frame to provide for its adjustment, substantially as herein described, to suit the thickness or depth of the head of the belt, or other headed article.

No. 48,019.—GEORGE W. HERRICK, Stuyvesant, N. Y., assignor to SAMUEL W. GIBBS, Albany, N. Y.—*Globe Stove.*—May 30, 1865.—To the largest circumference of a globe stove is attached a rim, which answers as a foot-rest; above this is a drop-down door, which, when open, is stayed on the foot-rest.

Claim.—The drop-door C, in combination with a foot-rest B, when applied to a globe stove, in the manner substantially as and for the purpose herein set forth.

No. 48,020.—CHARLES JONES, assignor to himself and CHARLES HODGES, Brooklyn, N. Y.—*Coal-hod, Ash-sifter, and Slop-pail combined.*—May 30, 1865.—This invention consists of an ordinary sheet-iron slop-pail, with the usual bail and lid. In the upper part of the pail is a removable, dish-shaped, perforated diaphragm to act as a sifter; from the upper edge of this diaphragm a small projection rises, which passes through a slot in the lid, and by means of which the diaphragm can be revolved at the same time with the lid.

Claim.—The pail A, provided with the cover C, in combination with the sifter D, constructed substantially as shown, and connected when in use to the cover C, by an upright passing through the cover, or an equivalent means; all being constructed of sheet-metal, and arranged to form a combined coal-hod, slop-pail, and ash-sifter, as described.

No. 48,021.—PHINEAS LAWRENCE and GEORGE JEFFEREYS, assignors to themselves and BENJAMIN LAWRENCE, New York, N. Y.—*Copying Press.*—May 30, 1865.—This invention consists in the use of a cam, in combination with a ratchet, wheel, and pawl, in place of the ordinary screw.

Claim.—A copying press formed with a cam lever to act upon the follower, in combination with the ratchet and pawl, for the purposes and as specified.

No. 48,022.—THOMAS LOVEGROVE, assignor to himself and HENRY BALDWIN, Jr., Philadelphia, Penn.—*Casting Shot and Shell.*—May 30, 1865.—This invention consists in casting the molten metal in a hollow spherical mould, and afterwards rotating said mould on a concave or dished surface, having a raised conical centre, until the metal becomes cool enough to be taken from the mould.

Claim.—Casting shot and shell in a spherical mould, and afterwards rotating said mould on a concave or dished surface, substantially in the manner described, for the purpose set forth.

Also, the combination of a rotating concave table having a raised conical centre with a spherical mould rolling freely thereon, as described.

No. 48,023.—MILTON V. NOBLES, Rochester, N. Y., assignor to himself and JOHN C. NOBLES, Rushford, N. Y.—*Rose for Door-knob.*—May 30, 1865.—In this invention a screw sleeve is used in combination with a rose plate, for the purpose of adjusting the length of the spindle between the knobs to the thickness of the door, and it also consists in the employment of a bolt or key inserted from the rear, in a hole made by a semicircular groove across the contiguous surfaces of the male and female screw, to prevent turning when applied to the door.

Claim.—In combination with the screw sleeve and hub, the pin, gib, or key *e*, for holding the two firmly together, when adjusted substantially as described.

No. 48,024.—MILTON V. NOBLES, Rochester, N. Y., assignor to himself and JOHN C. NOBLES, Rushford, N. Y.—*Fastening Door-knobs to their Shanks.*—May 30, 1865.—This device consists of a turning sleeve or thimble, surrounding the shank, against the end of which the end or inward projecting collar of said sleeve presses, and the opening in which corresponds in size and position to that in the end of the shank. Into these openings the spindle is introduced, and by turning the sleeves the sides of the square hole in the collar fit into notches or grooves in the corners of the spindle. The movement of the sleeve is regulated and secured by a spring pin or bolt, which prevents its being accidentally turned when in use.

Claim.—As a fastening for door-knobs and shanks, the combined use of the turning sleeve, catch, and check-pin, with the hub and shank of the knob, substantially as and for the purpose described.

No. 48,025.—MILTON V. NOBLES, Rochester, N. Y., assignor to himself and JOHN C. NOBLES, Rushford, N. Y.—*Fastening Door-knobs to their Shanks.*—May 30, 1865.—This invention consists of a split sleeve surrounding the shank, and secured loosely at the end next to the knob by short pins passing through each half into the shank. This sleeve has on each half an inwardly projecting flange, forming a collar, partly covering the end of the shank, and fitting in a groove or notch in the spindle inserted therein. The row or ring is then placed in the end of the sleeve, and screwed to the door, keeping the collar closed, and securing the knob to the spindle.

Claim.—As a means of fastening a door-knob to its shank, the combined use of a split sleeve, and a ring or ordinary rose plate, with the hub and shank, substantially as herein described and represented.

No. 48,026.—WILLIAM G. OLIVER, assignor to himself, SAMUEL O. BIGELOW, GEORGE H. RENDEL, and DAVID P. BENSON, Buffalo, N. Y.—*Drill for Oil and other Wells.*—May 30, 1865.—This invention relates to the construction of an expanding drill, which may be used in artesian wells, and consists mainly of a drill stock, having an internal inclined surface on which the drill picket works, and a hinged drill pick, which is operated by a vertical or up and down movement, and is thrust outwardly and laterally from the drill stock by gravity to enlarge the bore of the well at such place in its depth as may be desired for the purpose of opening a vein of oil or other liquid not struck in the sinking of the well.

Claim.—An expansion drill, consisting mainly of the drill stock A, hinged drill pick D and connecting bar B, and operated by a vertical or up and down motion thereof, for the purposes and substantially as herein described.

Also, the bottom section E, in combination with the drill stock A, for the purposes and substantially as described.

No. 48,027.—A. W. PARK, assignor to himself and C. J. WINTERS, Norwich, Conn.—*Tool.*—May 30, 1865.—This invention consists in a combination of a hammer, claw, socket, wrench, and screw-driver, in such a manner that the whole together forms at the same time a very serviceable monkey-wrench, with all the advantages of that in common use.

Claim.—The implement above shown, comprising combined hammer claw, monkey-wrench, socket-wrench, and screw-driver, substantially as described.

No. 48,028.—M. RANDOLPH, St. Louis, Mo., assignor to himself, J. PADDOCK, PRESCOTT, and BURNETT, St. Louis, Mo.—*Stave Cutting Machine.*—May 30, 1865.—The object of this invention is to cut a stave from a bolt, and finish it by jointing and crossing, all at the same operation of the machine. It also consists in combining with a reciprocating stave-cutting knife, a device for pushing the cut stave forward to two jointing knives, which work horizontally, and joint the two edges of the stave to the proper shape, after which it is fed on an endless apron to circular saws that cut them to the proper length, and at the same time croze and chamfer the ends ready for use.

Claim.—First, the employment of the plungers *d d*, racks *d d*, and gear-wheels *f f*, or their substantial equivalents, in combination with the cutter frame D, for the purpose of removing the cut staves and depositing them under the jointers, substantially as herein specified and represented.

Second, the arrangement and combination of a double-jointer *g g*, when constructed and adjusted to operate in such manner as to complete the jointing of both edges of the stave at the same time, substantially as herein set forth and described.

Third, operating the jointer *g g* in harmony and conjunction with the cutter-frame D, so that the staves may be cut and jointed without removal from the machine, substantially in the manner herein set forth and specified.

Fourth, the combination of the cutter heads *m m*, with the conveyors *n n*, constructed and arranged to operate as and for the purposes set forth.

Fifth, the combination and relative arrangement of the cutter-frame D, jointer *g g*, cutter heads *m m* and conveyors *n n*, all being constructed and adjusted to operate conjointly, substantially as and for the purposes herein set forth and specified.

No. 48,029.—RENSSELAER REYNOLDS and CHARLES YOUNG, assignors to RENSSELAER REYNOLDS, Stockport, N. Y.—*Horse Hay-fork.*—May 30, 1865.—This invention relates to certain devices by means of which the load of the fork is discharged, and will be understood from the claim and engraving.

Claim.—First, the trigger D, provided with a lip *e*, and applied in combination with the toggle arms B B′, and two hinged gripping jaws, A A′, in the manner and for the purpose herein shown and described.

Second, the hand-lever C, attached to the arm B′, and applied in combination with the jaws A A′ and toggle arms B B′, in the manner and for the purposes set forth.

No. 48,030.—H. H. SCOVILLE, assignor to himself and E. C. PREBLE, Chicago, Ill.—*Amalgamator.*—May 30, 1865.—This invention consists of a case divided in three compartments by means of partitions. Within the largest portion of the vessel is a wheel constructed with winding passages, all terminating at the centre of said wheel, where they communicate with the interior of the cylinder. In the cylinder is a rotary screw, the blades of which fit closely to the inner surface of said cylinder. The wheel and rotary screw are made to revolve by means of the wheel attached to the shaft, and the ore and fluid metal contained in the vessel are carried by the winding passages to the centre of the wheel, where they are discharged into the cylinder, and carried along by the revolving screw, and are there discharged through the apertures in the head.

Claim.—First, projecting each bucket on a scroll from the discharging eye or hub of the axial shaft, substantially in the manner and for the purpose described.

Second, the arrangement of the chamber *f* and screw *d*, or their equivalents, at the discharge of the scroll chamber, substantially in the manner and for the purpose described.

Third, the cylinder *f* and screw *d*, constructed and working together, substantially in the manner and for the purpose described.

Fourth, the mode of attaching the screw to the machine for submerging the quartz, substantially as herein described.

Fifth, a machine which discharges the quartz from its scroll submerging chamber directly into its screw conveying chamber, substantially as and for the purposes herein described.

No. 48,031.—WILLIAM T. SLOCUM, assignor to JAMES S. MASON & CO., Philadelphia, Penn.—*Manufacture of Boxes.*—May 30, 1865.—This invention consists in making two longitudinal slots near one end of the strip, forming the body of the box, and transverse cuts from the edge near the other end, the depth of said cuts from the edge corresponding to the distance from the edge of the longitudinal slots, and turning up the pieces between said cuts and the end longitudinally, forming ears, which are inserted into the slots in the other end, and then straightened out to their normal position, clamping the two ends firmly together.

Claim.—Connecting the two ends of the strip A, by forming on one end of the same the lips *a*, and in the other end the slots *b*, through which the said lips may be passed, and then bent down to one side or the other, substantially as described.

No. 48,032.—JOHN STEVENS, assignor to himself and THEODORE BOURNE, New York, N. Y.—*Cotton Gin.*—May 30, 1865.—The claim and engraving define the nature of this invention.

Claim.—The combination of the large cylinder B, small roller D, reciprocating plate G, feed-board L, doffer plate J, and pressure roller F, all arranged and operating substantially as and for the purposes set forth.

No. 48,033.—EDMUND B. VANNEVAR, assignor to E. B. VANNEVAR & CO., Boston, Mass.—*Means of Closing Ships' Deck and Side Lights.*—May 30, 1865.—Through the frame of a bull's-eye in a vessel's deck passes a staple, to the top of which is hinged the metallic ring which rests around and above the bull's-eye. This staple passes loosely through the bull's-eye frame, so as to vibrate therein to a certain extent, and its lower free end is provided with a screw and nut, so that there is in the staple a hinge at the upper end, and a screw at the lower end, and by means of the latter, in connection with the other screws of the bull's-eye frame, all parts of that frame may be screwed down equally tight.

Claim.—The hinged staple G, provided with an adjusting screw H, constructed substantially as described, and used for the opening and closing of deck and side lights for vessels.

No. 48,034.—P. J. JAMET, Paris, France.—*Safety Tackle.*—May 30, 1865.—This tackle is intended to be capable of holding in suspension a load at any given elevation, and this it accomplishes by means of a vibratory frame hung in a suitable link of the stationary block in such manner that immediately upon the cessation of pull upon the rope to raise the weight the rope is swayed into a recess or gorge, and compressed there with a force proportionate to the weight, and immediately upon the resumption of the pull upon the rope, it will be swayed out of the said recess, and the weight caused again to ascend.

Claim.—First, the construction, substantially as herein described, of a safety tackle for the purpose of holding or maintaining weights in suspension during the intervals of pull.

Second, the oscillating frame or block under the arrangement described, so that the pulley or sheaves, together with the rope or cord, perform the function of brake in connection with the cross-head of the hook, substantially in the manner hereinbefore set forth.

Third, the movable cam lever or catch, whether operated by the rope or otherwise, under e arrangement described, so as to prevent brake action, in the manner and for the purpose t forth.

No. 48,035.—WM. A. LEGGO and GEORGE E. DESBARATS, Quebec, Canada.—*Photo-electrotype.*—May 30, 1865.—In this invention the photographic negative is coated with bicromated gelatine, and washed after exposure. It takes a plaster cast while wet, and prints from an electrotype. The improvement consists in pouring the bicromate solution on the negative.

Claim.—The within-described process of producing upon the surface of any transparent picture, drawing, or manuscript, by the action of light, a mould capable of yielding a cast in plaster or other suitable material, substantially in the manner and for the purposes herein set forth.

No. 48,036.—JAMES ARKELL and BENJ. SMITH, Canajoharie, N. Y.—*Paper Bag.*—June 6, 1865.—This invention consists in scoring the upper edge of the bag, so that the mouth can be folded and closed easily, without danger of tearing.

Claim.—Softening the upper parts of the paper bags and making them pliable, substantially as and for the purpose above described.

No. 48,037.—WM. BAMFORD and J. F. TATE, Jr., Milwaukee, Wis.—*Stove.*—June 6, 1865.—This invention consists of an air chamber, suspended inside the stove concentrically with the outer casing, and above the door for the admission of fuel. The interior of this chamber is connected with the outer air, by one or more pipes in the bottom and top, by means of which a circulation of air is kept up through it. There is a series of pipes running perpendicularly through the chamber, through which the products of combustion pass, by which the air inside is more thoroughly heated, and from the pipes the products of combustion flow off to the exit flue.

Claim.—First, the air chamber E, provided with one or more draught flues L L, discharging into the main pipe or flue D.

Second, the flues L L and pipe I, in combination with an air chamber placed inside of a stove.

Third, the opening or pipe H, when used for passing the outer air through a heated space and into an inner chamber provided with flues, as specified.

Fourth, the air chamber E, flues L L, pipe I, pipe or orifice H, and register G or F, in combination with the outer case or stove A, each of said parts and combinations being substantially as set forth and specified.

No. 48,038.—A. E. BARNARD, Cleveland, Ohio.—*Pipe Coupling.*—June 6, 1865.—In this invention the male section has two lugs projecting on opposite sides at its extremity, one of which enters a corresponding mortise in the wall of the female socket, while a revolving cam in a socket attached to the latter is made to bear upon the other lug, and thus clamp the two sections together.

Claim.—First, the cam F and boss D, in combination with the lugs *d c* and opening *e*, substantially as and for the purpose set forth.

Second, the recessed chamber *f'*, packing J, in combination with the coupling, substantially as and for the purpose set forth.

No. 48,039.—WM. E. BARTON, East Hampton, Conn.—*Buckle Attachment.*—June 6, 1865.—This invention consists in a metallic cap fastener, formed with a curve in the middle to embrace the cross-bar, an aperture for the tongue, ears resting on the strap, and riveting stems cast on said ears, to fasten the strap, the whole being combined with a common buckle.

Claim.—The metallic buckle fastening for fastening buckles to straps, constructed as described.

Also, the said metallic buckle fastening, in combination with buckle and strap, substantially as described.

No. 48,040.—WM. E. BARTON, East Hampton, Conn.—*Sleigh-bell Attachment.*—June 6, 1865.—This invention consists in a metallic holder resting on straps, the strap side being armed with two projecting points, to impinge upon the leather, the bell side having prongs to pass through holes into the bell. The extremity of these prongs is clenched inside the bell, so that the latter may remain loose, and thus shake more freely.

Claim.—First, the within-described metallic bell-holder, cast of brass or suitable malleable metal, having a hole through it to secure the strap, impinging points on the strap side, and on the bell side prongs adapted to enter the bell through suitable holes therein, and hold the same by bending or clenching, substantially as set forth.

Second, the said bell-holder strap and bell, in combination when put together so as to hold the bell loosely and away from the strap, substantially as described.

No. 48,041.—JULIUS BAUR, Brooklyn, N. Y.—*Composition for Lining Oil Barrels.*—June 6, 1865.—This invention consists of a composition of muriatic acid, metallic zinc, glue, water, and glycerine.

Claim.—The employment or use in a compound for lining petroleum packages of chloride of zinc and glue, made substantially as herein set forth.

Also, the use in a compound for lining petroleum packages of chloride of zinc mixed with glycerine, as described.

Also, a compound made of chloride of zinc, glue, and glycerine mixed together, substantially in the manner and about in the proportions herein specified.

No. 48,042.—Henry Bickle, Elizabeth City, N. J.—*Power-gaining Machine.*—June 6, 1865.—This invention consists in a specific combination and arrangement of levers, &c., and will be understood by the claim and engraving.

Claim.—The combination of the toggle levers G H I J K L M, working beam C, and fly wheels E R, all arranged and operating as specified.

No. 48,043.—Dana Bickford, Boston, Mass.—*Air-Engine.*—June 6, 1865.—This invention consists in combining with the air-pump a reservoir in which the air is to be compressed, and in placing within said reservoir a body of fluid so that the air while being driven into the reservoir shall be caused to pass through the liquid contained therein; also, in combining with the air-reservoir and with the open cylinder and its piston, a vibrating conduit and gate, together with the opening to the cylinder for controlling the admission of air to the same. The piston is moved in one direction by means of the compressed air, and in the other by a spring combined therewith.

Claim.—The combination of the hollow vibrating conduit H and the gate K.

Also, the combination of the lifting spring *o*, with the piston and cylinder provided with the vibratory conduit H, and gate K, as described.

Also, the combination of the hollow vibratory conduit H, and the gate K, with the air-compressing reservoir A, and the open cylinder M, and the piston N, thereof.

Also, the combination of the vibratory conduit H, and gate K, with the flexible conduit G, and the opening *a*, thereof, the whole being substantially as and so as to operate as set forth.

Also, the employment of the mass of liquid in the reservoir B, with the air-pump combined therewith, as set forth, and a piston and cylinder connected therewith, and having a conduit H, and gate K, or their mechanical equivalents, as specified.

No. 48,044.—James Bird, New York, N. Y.—*Hoisting Machine.*—June 6, 1865.—A shaft, keyed in the sides of the frame so that it will rotate, carries loosely upon it two sets of pulleys, one set of three on one side, and a set of two on the other, each set being cast together. One pulley of each set is a gear-wheel, gearing with a cog-wheel on a shaft rotating below. The pulleys being of different sizes, the chain going around them, is taken up quicker by the smaller ones than the larger.

Claim.—The hoisting apparatus constructed substantially as above described, the driving pulley and gear B C, being placed on the same shaft with the hoisting pulleys and their gear-wheel, as above set forth.

No. 48,045.—James Bowers, New York, N. Y.—*Corset.*—June 6, 1865.—In this invention the stays pass through the pockets in the corsets and have eyelets coincident with those in the corsets, the lacings passing through both.

Claim.—A garment connected by means of lacings or their equivalents passing through the eyleted stays within a duplicate fabric also eyleted, all substantially as shown and described.

No. 48,046.—John Bradshaw and Samuel C. Wilson, Albion, N. Y.—*Stove-pipe Damper.*—June 6, 1865.—This invention consists of a ring connected with a circular centre piece by bands rising above and extending below their surfaces, so as to form grooves alternately above and below, through which the products of combustion will flow when the damper is in a horizontal position.

Claim.—The employment of the within damper, cast in the form described, and arranged to operate as and for the purpose specified.

No. 48,047.—C. B. and William T. Brown, Alton, Ill.—*Threshing Machine.*—June 6, 1865.—The various parts of the machine are so arranged that it rests upon two wheels, and can be reached in every part without the use of a platform for the operator to stand upon.

Claim.—A threshing machine mounted on two wheels and constructed and arranged as herein described, so that the operators can stand on the ground, dispensing with the use of a platform.

No. 48,048.—Jacob E. Buerk, Boston, Mass.—*Watchman's Time Detector.*—June 6, 1865.—Upon the face of the rotating dial is placed a dial of paper or card marked with the hours, and also with divisions corresponding to the number of stations. In the face of the dial is a slot, above which is a fixed index. By means of a different key for each station, and in possession of the watchman, a spring point is forced through the slot against the fixed index, and thus the time that the watchman reaches the station is indicated.

Claim.—First, the use of a false revolving dial E, in combination with the stationary index D, and spring points *d*, constructed and operating substantially as and for the purposes set forth.

Second, producing the perforations on the paper dial or its equivalent from the inside out, instead of from the outside in, as before.

No. 48,049.—JOHN C. BROWN, G. H. SLIMPERT, Pinkneyville, Ill.—*Gang Plough.*—June 6, 1865.—In this invention each of the two parallel plough beams is fastened in front to an adjustable rocking bar. The rear of each beam is raised by a locking lever that is worked upon the upper shaft of an adjustable slotted plate. A caster-wheel is fastened to a short arm which is hinged upon an adjustable side beam.

Claim.—First, the arrangements of the hinged adjustable beam L, with a caster-wheel C, in the manner and for the purpose herein described.

Second, the use of self-locking levers J J, for raising or depressing the ploughs, applied to the adjustable guides *d d'*, substantially as described.

Third, connecting the hooked rocking levers J J to the plough beams by means of bent swinging rods, substantially as described.

Fourth, the laterally adjustable slotted plates *d d'*, applied to the slotted frame G, and adapted to serve as guides for the plough beams F F', and also as bearings for levers which are used to raise and depress said beams, substantially as described.

Fifth, pivoting the forward ends of the plough beams to rocking bars *a a'*, which are arranged one in advance of the other, and applying the ploughs to said beams at about equal distances from their respective pivotal connections, substantially as described.

No. 48,050.—D. P. BUTLER, Boston, Mass.—*Weight-lifting Apparatus.*—June 6, 1865.—In this invention for hygienic purposes, a table is constructed under which weights are suspended on a rod which extends up through the table, and has a convenient handle on it, by which it is lifted.

Claim.—A weight-lifting apparatus having a construction and capability of adjustment substantially as described.

No. 48,051.—D. P. BUTLER, Boston, Mass.—*Weight-pulling Apparatus.*—June 6, 1865.—In this invention for physical exercise a strap is passed over pulleys, in a convenient manner, in front of a platform made to be raised or lowered to suit the height of the person using the same.

Claim.—A weight-pulling apparatus having a construction and provision for adjustment substantially as set forth.

No. 48,052.—JOHN CAIN and A. B. CAIN, Dubuque, Iowa.—*Shank Laster.*—June 6, 1865.—This invention consists of two levers which are crossed and jointed together so as to form two jaws and two handles; the inner parts of the jaws are made of leather, the edges of said jaws extending beyond the toothed or spurred ends of the same.

Claim.—First, the compound jaws *b b g g*, when the inner jaws are made of leather or other flexible substances, substantially as described.

Second, extending the edges of the jaws *d d* beyond the toothed or spurred ends of the jaws *b b*, substantially as described.

No. 48,053.—THOMAS W. CLARK, Manchester, N. H.—*Washing the Blankets of Printing Machines.*—June 6, 1865.—This invention consists in dispensing with the squeeze rollers of ordinary machines for the purpose, and adding a "doctor" or scraper.

Claim.—The employment or use in the blanket-washing devices of machines for printing fabrics, such as calicoes, delaines, &c., of a scraper or pressure roller to the washing rollers, to operate in the manner substantially as and for the purpose set forth.

No. 48,054.—DENNIS A. DACEY, New York, N. Y.—*Tool for cutting off Boiler Tubes.*—June 6, 1865.—This invention consists in boring out a shaft of the size of the bore of the tube to be cut, and attaching thereto expanding cutters and arranging upon the outside of said shaft a sleeve with a bore large enough to slide over the outside of the tube, to act as a steadying guide, said shaft being inserted into the tube the proper distance, and rotated with a wrench or lever, and the cutters expanded as required until the cube is cut off.

Claim.—The implement herein described, constructed and operated substantially in the manner set forth, for cutting off boiler tubes and for other work.

No. 48,055.—CHARLES H. DANA, West Lebanon, N. H.—*Sheep Label.*—June 6, 1865.—This invention consists of a strip of metal, having the desired label engraved or punched thereon, and is passed through one or two holes in the animal's ear, and the two ends brought together, and pressed flat.

Claim.—The within described link-shaped label for marking sheep, both ends being fastened closely to the ear, in the manner substantially as set forth.

No. 48,056.—DARWIN ELLIS and GEORGE R. STETSON, New Haven, Conn.—*Machine for attaching Balls to Cartridges.*—June 6, 1865.—In this machine the ball is dropped into a receptacle, between the ends of two horizontal spindles, mounted on a suitable frame or bed. The inner end of one spindle passes into an aperture in the receptacle, and comes in contact with the conical end of the ball, the other being in contact with the open end of the metallic cartridge, which is held in an aperture in the inner end of the other mandrel. The machine is then put in motion, and while revolving, a longitudinal movement is also given to the

mandrels towards each other, and the ball forced into the cartridge case the proper distance. A circular revolving tool or crimper is then brought to bear upon the cartridge, immediately over the groove in the ball, and crimps or forces the case into said groove, and secures the two together, they being supported from below by two parallel friction rollers, upon which they revolve.

Claim.—First, the combination of the two shafts *g* and *k*, with the revolving crimper F, when the whole is constructed, arranged and fitted to produce the result substantially as herein described.

Second, the combination of the two shafts *g* and *k*, with the receptacle *j*, and the anti-friction rollers *r r*, when they are constructed, located and fitted for use, substantially as herein described.

Third, the combination of the revolving crimper F, with the receptacles *j*, and the anti-friction roller *r r*, when the whole is constructed and fitted for use, substantially as herein described.

No. 48,057.—Milton Finkle.—New York, N. Y.—*Heddle Frame for Loom.*—June 6, 1865.—In this invention the frame is adjustable to any length desired; the heddles, whether of wire or twine, can be put on or off with facility, and are also relieved of strain when the harness is operated.

Claim.—First, the adjustable heads C, constructed in the manner substantially as above described, for receiving the ends of the shafts A, and rods *a*.

Second, the combination of the heads C, and caps D, made and applied substantially as above described.

Third, the stays D′ with hooks or eyes attached, with or without the connecting rods B′, substantially as above described.

No. 48,058.—A. V. and A. F. Fletcher, Athol, Mass.—*Stove-pipe Damper.*—June 6, 1865.—In this invention the frame consists of an annular piece of iron, cast or otherwise, with a piece across the centre; on a pin through the centre a disk, large enough to cover the aperture, is fixed, and on the other side of the frame is attached a piece of sheet metal of a spiral form. When the damper is turned so as to bring the spiral uppermost, the disk falls on the pin, and a draught is obtained; when the disk is uppermost, it rests upon and covers the aperture.

Claim.—First, the disk F, constructed and arranged substantially in the manner shown and described.

Second, the spiral cord E, attached to a stove-pipe damper, substantially as and for the purposes herein specified.

No. 48,059.—P. S. Haines, Newburg, N. Y.—*Carding Machine.*—June 6, 1865.—In this machine the doffer comb has a drawing action on the fibre, and its shaft may be adjusted vertically, to vary the length of its throw, and the period of its contact with the teeth of the doffing cylinder.

Claim.—The combination of the shaft H, and comb C, with the hanging bearings N, and clamping nuts O, substantially as and for the purposes above described.

No. 48,060.—James Hall, Dorchester, Mass.—*Mode of applying Covering to Roofs, the Decks of Vessels, &c.*—June 6, 1865.—To the surface of the roof to be covered is applied a coating of thick paint, which is allowed to become partly dry. The cloth is then applied to the painted surface, and a metallic vessel containing live coals is passed over the cloth, causing it to adhere firmly to the paint. A coating of paint may be laid on the cloth if desired, the heated iron being passed over the whole.

Claim.—The application of heated metals to the surfaces of the cloth, in the process of imbedding the cloth in the paint, uniting the cloth to the surface more firmly and smoothly than can be done without the application of heated metals.

No. 48,061.—G. B. Halsted, New York, N. Y.—*Handle for Tea and Coffee Pots.*—June 6, 1865.—In this invention the handle is constructed of two parts of sheet metal, swaged or struck up and soldered together.

Claim.—As a new article of manufacture, a handle for sheet-metal tea and coffee pots, and other similar sheet-metal vessels, constructed of two longitudinal parts swaged or struck up in any proper or desired form, of sheet-metal, and connected together by solder or otherwise, substantially as herein set forth.

No. 48,062.—James Harsha, Circleville, Ohio.—*Stone Grinding and Polishing Machine.*—June 6, 1865.—This invention consists in the combination of a carriage, a gate, and an inner frame for the purpose of imparting a vertical, rotary, and two horizontal motions; in a grinder for the transmission of the grinding material to the impinging surfaces; in a scraper attached to the frame, and made tangential to the heel of the grinder.

Claim.—First, the combination of the carriage B, gate D, and inner frame J, operated substantially as described, so as to secure the vertical rotary and two horizontal motions, for the purpose described.

Second, the grinder K, with its orifices, constructed in the manner described, for the transmission of the grinding material to the impinging surfaces.

Third, the scraper S, in the described relational position to the orifices R, in the grinder K.

No. 48,063.—W. H. HARTMAN, Fostoria, Ohio.—*Combined Seeding Machine, Roller, and Drag.*—June 6, 1865.—In this invention an oscillating drag is suspended by chains in front of large rollers. The drag is caused to oscillate by means of a crank driven by a cog wheel on one of the rollers. The drag is provided with a seed box, for the purpose of sowing small seeds. A distributing apron is suspended below the main seed-box, which distributes the seed therefrom in front of the drag, which covers the seed, and the rollers following, smooth down the ground.

Claim.—First, the oscillating drag M, provided with a seed-box V, as and for the purpose specified.

Second, the distributing board K, in combination with the seed-box G, and roller B, when arranged and operating as and for the purpose set forth.

Third, the adjustment of the roller B, in its relation to the drag M, as and for the purpose described.

No. 48,064.—G. W. HATCH, Parkman, Ohio.—*Machine for Gathering and Loading Flax.*—June 6, 1865.—This invention consists in the combination with adjustable side pieces, of a cross piece in the rear of the machine, to which a rake is attached, said rake being provided with spiral springs at its upper ends for the purpose of giving elasticity to the same; and it also consists in the arrangement of a carrier, having a series of elevators passing over rollers, both in front and rear of the machine. The rear roller has a shaft passing through it, to which it is secured by a screw; the object of said screw being to secure or release the said roller or sleeve therefrom or thereto. And it further consists in the combination and arrangement with the rollers of pulleys, over which a band passes, and communicates motion to the carrier.

Claim.—First, the springs *e*, and rake C, attached to the pieces B″ *d* of the frame, and in combination with the adjustable side pieces E, the carrier M, elevators H, and rollers F F′, when arranged and operating substantially as and for the purpose set forth.

Second, the roller or sleeve F, and shaft D, in combination with the pulleys *m m′* and I J, when arranged and operating substantially as and for the purpose set forth.

No. 48,065.—HERMAN HAUPT, Cambridge, Mass.—*Ventilation of Mines.*—June 6, 1865.—This invention consists in the use in mining and like subterranean operations, of steam generators in combination with a vacuum pipe.

Claim.—The use in mining, tunnelling, and other subterraneous operations, of steam generators in combination with a vacuum pipe.

No. 48,066.—SAMUEL G. HORNING, Mount Carroll, Ill.—*Cultivator.*—June 6, 1865.—In this invention, a central frame with plough beams is rigidly fastened upon the axle, which is arched in the centre. Two side beams move freely, being pivoted on the axle, and are connected by jointed metallic adjustable braces to two uprights, united by a cross-piece. The uprights move freely upon the axle.

Claim.—The combination of axle B, the bar E, the beams *s s*, chains *t*, the beams C C, and braces O and I, the whole constructed and arranged as and for the purpose substantially as herein set forth.

No. 48,067.—HENRY HOWARD, Westfield, Mass.—*Boiler for Steam Heating.*—June 6, 1865.—This apparatus is so constructed that, when placed against corresponding sides of similar boilers, or against perpendicular walls of an enclosing furnace, it shall constitute and partially embrace two or more longitudinal flues, to conduct the products of combustion back and forth over nearly the entire exterior surface of the boiler.

Claim.—The boiler A, for heating water and generating steam, when formed, constructed and arranged substantially in the manner herein set forth.

No. 48,068.—HENRY HOWE, Darlington, Wis.—*Cultivator.*—June 6, 1865.—In this machine, two triangular plough frames are pivoted at one end to a straight bar, extending from the tongue to the rear, and fastened at its middle to the axle. The sides of the triangular frames are pivoted to bars that sustain the seat, and the front ends are connected to the draught equalizer.

Claim.—First, the oblique bars E E, connected to the draught-pole D, and to the short parts *a a* of the axle A, in connection with the bars I I, and driver's seat L, substantially as and for the purpose set forth.

Second, the plough frames F F, connected to the bars E E I I, and shaft K, substantially as shown, and to admit of being operated as described.

No. 48,069.—JOSEPH INGALS, Milton, Ind.—*Grain Drills.*—June 6, 1865.—In this device a spring brace bar is attached to the under side of the drag bar, the end of the spring resting

against an arm which projects from the tooth. The end of the spring and arm are both so constructed, that when the tooth meets with an immovable obstruction, it will move backwards and let the machine pass, when the tooth resumes its former position.

Claim.—First, the spring brace bar G attached to the drag bar, and impinging at the curve *h* upon the end of the flange F, in the working position of the hoe, and having an incline, upon which the point of the flange rises when the hoe is deflected backward, as described and represented.

Second, the indentation *n* on the flange F in which the end of the spring rests, detaining the hoe from further backward deflection.

No. 48,070.—JOHN G. IVES, Springfield, Ill.—*Slide Valve.*—June 6, 1865.—This invention consists of what may be termed a "spool valve," bearing upon each of its enlarged ports a series of rings, with a chamber or space between them and the body of the valve, for the steam, which forces them out into contact with the cage to circulate in. The steam for the above-described purpose is admitted from a cavity formed in the end of the valve to the chamber, underneath the rings, through small apertures formed in the body of the valve.

Claim.—The combination of the sections or rings E E, composing the valves, the chamber or space *b*, and the apertures *c*, for admitting steam to the said space *b* from the space *d*, the whole being constructed and arranged to operate in the manner and for the object specified.

No. 48,071.—JOSEE JOHNSON, New York, N. Y.—*Washing Machine.*—June 6, 1865.—This machine is operated by a lever and pounder, and subjects the clothes to a beating or compressing action in a tub of triangular form, one of the sides of the tub being perpendicular, and the pounder being operated by moving up and down along the upright side.

Claim.—As an improved construction of washing machine, the sides 3 and 4 of the tub A, arranged as represented, in combination with the lever C, and pounder E, operating relatively to each other, and to the sides 3 and 4, substantially in the manner and for the purpose herein set forth.

No. 48,072.—ROBERT V. JONES, Canton, Ohio.—*Meat Crusher.*—June 6, 1865.—This invention consists in the employment of cylinders, provided with teeth and longitudinal grooves in a suitable frame, the upper cylinder being mounted in sliding boxes, provided with guide rods and spiral rings.

Claim.—The combination of the roller C, rotating in fixed bearings, and provided with a crank D, the roller C, mounted in sliding boxes E E, the guide rods F F, and springs H H, one of the said rollers being provided with teeth, and the other with longitudinal grooves, and all arranged to operate as specified.

No. 48,073.—BENJAMIN F. JOSLYN, Stonington, Conn.—*Breech-loading Fire-arm.*—June 6, 1865.—In this invention the breech-block rotates horizontally on a vertical pin, and has on its under side a shoulder formed concentrically with the pin, and bearing against a corresponding projection on the supporting stock. A hook attached to the pin, and rotating with it when the breech-block is laterally opened, engages with the spring-catch of a sliding cartridge retractor.

Claim.—First, the breech-block D, with its pin *d* and concave shoulder *n*, in combination with a convex shoulder *m* on the stock or frame adapted to the said shoulder *n*, all substantially as set forth.

Second, The block G, with its projection *k*, spring-catch W, and spring-rod H, in combination with the breech-piece D, pin *d*, and notched disk E, the whole being arranged for joint action substantially as and for the purpose herein set forth.

No. 48,074.—JOHN H. KAVANAGH, Joliet. Ill.—*Submarine Port-hole Closer.*—June 6, 1865.—The water is prevented from running into the port-hole by an India-rubber ring, which, hugging the muzzle of the gun, is placed between two metal plates. The valves or gates of the port-hole are closed by the recoil of the gun, they being connected to the gun-carriage.

Claim.—First, the combination of the outer and inner valves G and G′, with the outer and inner plates A and B surrounding the port-hole, constructed and operated substantially as described.

Second, the combination of the valves G and G′ with their axles I and I′, and scroll springs L and L′.

Third, the rocking lever cranks S T U, and S′ T′ U′, and their combinations with the valve levers N and N′, and the wheels of the gun-carriage, substantially as described.

No. 48,075.—CHRISTIAN F. KRIAUER, Pittsburg, Penn.—*Shutter Hinge.*—June 6, 1865.—This invention consists in making the hinges with tangs and shanks at right angles with each other, in such a manner that the tangs may be driven into a bored hole in the frame or blind, and the shanks sunk in flush with the edge of the wood, so as to prevent turning; and also of a double pintle, and double projections on the male part, to form a right or left hand hinge.

Claim.—First, a hinge, for window shutters, blinds, &c., composed of tangs and shanks at right angles to each other, and provided respectively with pintles and eyes, substantially as herein shown and described.

Second, in combination with a hinge, so made, the corrugating or roughening of the tangs, substantially as and for the purpose specified.

Third, the double pintle *a*, and two projections *e e* on the part A of the hinge, in connection with the V-shaped projection *i* of part C, all arranged substantially as shown, to admit of the hinges being applied indiscriminately to either right or left hand shutters or blinds.

No. 48,076.—G. C. LAWTON, Syracuse, N. Y.—*Car Coupling.*—June 6, 1865.—This invention consists of a draw-head, provided with a bevelled opening, inclining inward from the sides to the centre, and upward from the bottom to the top; also of a draw-head, provided with a hook-head, so arranged that when two cars are brought together the said hook-head readily slips up the inclination of the bevelled opening, into a slot therein, by which means the coupling is securely effected, even if the trucks are of varying height.

Claim.—First, the peculiarly-shaped head B of the draw-rod A, with its shoulders *c c*, and its extension above, and the sloping position at which it is attached to the draw-rod, constructed, arranged, and operating substantially as described.

Second, the backwardly-sloping shoulders F, in the rear of the gain or slot attached to and projecting from the inner surface of the sides of the buffer-head.

Third, the combination of the peculiarly-shaped and positioned head B, with its shoulders *c c*, with the double and upwardly and backwardly inclining plane E E, and the central gain or slot, open at the top, and the backwardly-inclining shoulders F behind the gain or slot in the buffer-head, all constructed, combined, arranged, and operating substantially as shown and described.

No. 48,077.—C. J. LEGG, Penn Yan, N. Y.—*Corn Husker, Sheller, and Cleaner.*—June 6, 1865.—In this device the discharge spout is divided, and a wing valve inserted, so that one spout may be entirely closed, while the bag is being changed, the other spout meanwhile discharging into the second bag.

Claim.—In combination with the shelling cylinders B D, constructed as described, and provided with the screen G and fan K, the arrangement of the bagging elevator M, with the valve S, the whole operating substantially as and for the purposes herein specified.

No. 48,078.—G. R. LEWIS, Ashtabula, Ohio.—*Machine for Tallying Lumber, &c.*—June 6, 1865.—This invention consists of two disks moving independently on the same axis, and placed upon a horizontal tube, around the circumference of which are a series of numbers, marked from 1 to 100. Attached to each disk is a pointer; the indicator turns on the axis of the machine, and is provided on its under side with a spring arm and catch, which, when the indicator is brought near the cam on the edge of the table, is forced into the teeth of the disk, so that it is carried around with the indicator, but when the indicator is reversed, the teeth escape. By means of cams and pinion the passage of the cam, after the primary disk has revolved, moves the secondary disk one tooth.

Claim.—First, the disks C and D, in combination with the index B, and indicator F, as and for the purpose set forth.

Second, the catch *d*, arm *g*, and spring *b*, in combination with the indicator and disk D, as and for the purpose set forth.

Third, the cam I′, with the catch J and pinion G, in combination with the disk C and cam *h*, as and for the purpose set forth.

Fourth, the slide *p* and cam K, in combination with the indicator F and disks, as and for the purpose set forth.

No. 48,079.—C. M. LOOMIS, Hartford, Conn.—*Button.*—June 6, 1865; antedated May 23, 1865.—In this invention a staple enters the cloth from the inside, and its two legs pass through the back disk of the button. The face disk is then laid on, and so pressed as to turn down the legs of the staple within the button, when the perimeter of the face disk, which is larger than the back, is pressed inward, so as to bind the two together.

Claim.—The employment of the staple C, in combination with the disk A, having the curved or concave surfaces inside the button, substantially as and for the purpose herein described.

No. 48,080.—HARVEY L. LOWMAN, Virginia City, Nev.—*Mining Pick.*—June 6, 1865.—This invention consists in forming the eye or socket in which the handle is inserted of an elliptical shape, and the opposite sides of which are parallel to each other, said socket being elongated in the line of its axis, and in combination therewith; the bits or points of the pick merging by curved lines into the central socketed head.

Claim.—As a new article of manufacture, the pick, constructed as herein described; that is to say, with an elliptical socket, the opposite sides of which are parallel to each other, and elongated in the line of its axis, in combination with bits merging by curved lines into the central socketed head, as described and represented.

No. 48,081.—CHESTER M. MANN, Detroit, Mich.—*Propulsion of Street Car.*—June 6, 1865.—The nature of the invention will be understood by reference to the claim and engravings.

Claim.—The arrangement of the lever G, links H H, and cranks I I, in combination with the ratchets L and M, provided with pawls to reverse the motion, and connected by gearing to the driving wheels, for the purpose specified.

No. 48,082.—GEORGE MATHEWMAN and ANTHONY LEININGER, Brooklyn, N. Y.—*Mould for Button Making.*—June 6, 1865.—This invention consists in a lower die composed of two parts hinged together by a pin passing through lugs projecting downward. Recesses to receive the eyes are formed in the said two parts, to one of which is adapted a shelf or projection. The eyes rest upon the shelf. By closing the two parts of the lower die tightly, each eye is held firmly in its proper condition. The melted material is then poured along the line of the eyes so as to cover them. Then an upper die presses the glass. By lifting the upper die and opening the lower die the buttons are readily removed.

Claim.—First, constructing the lower die in separate parts B and C, adapted to close tightly around the neck of the eye E, substantially in the manner and for the purposes herein set forth.

Second, in connection with the above the shelf *c*, or its equivalent, arranged as represented, and adapted to support the eyes E, and aid in placing them in the die, substantially as herein before set forth.

Third, supporting the parts B C on the bed A, so that the pressure of the upper die G upon the face of the buttons shall cause the parts B and C to be sprung or compressed more tightly together, substantially in the manner and for the purpose herein set forth.

Fourth, the arrangement of the handles *b c* on the parts B and C, and standing parallel or nearly parallel to the axis D, substantially as and for the purposes described.

No. 48,083.—L. W. MORIAN, New Lisbon, Ohio.—*Bag Holder.*—June 6, 1865.—This invention consists in an apparatus made to be portable, and to have self-adjusting rocking plates for holding the mouth of the bags when they are to be filled.

Claim.—First, a bag holder constructed and operated substantially as above described.

Second, the self-adjusting rocking plates E, for holding the mouth of the bags when they are to be filled, constructed and applied substantially as described.

No. 48,084.—JOHN MURRAY, New York, N. Y.—*Car Spring.*—June 6, 1865.—This invention consists in the peculiar construction and arrangement of the dividing plate between the upper and lower bags; cases which contain spiral springs by which this plate is made to answer the twofold purpose of a base for the upper set of springs and a cap for the lower set, and also to act as a guide to hold both sets in a vertical position, and at the same time to allow play of the springs and sliding of the studs through the plate.

Claim.—The peculiar construction of the division plate C, combined with the boxes, springs, and spindles or studs, by which it is made to answer the twofold purpose of a cap and a base for the two boxes and sets of springs respectively; and at the same time acts as a guide and support to the spindles and allows them the required action, as described.

No. 48,085.—GABRIEL NATCHER, Sidney, Ohio.—*Railroad Signal.*—June 6, 1865.—This invention consists in constructing a lever at right angles to the track, and having an upwardly projecting flange, which is suddenly depressed by the flange of a passing wheel so as to cause a vibration of the lever, and, by means of a connecting wire, oscillate a rock shaft and draw upon a wire which is stretched from pole to pole along the railroad, and connected to bells at suitable intervals, to give notice to an approaching train, or to passengers on crossings, or to communicate the alarm to a point in advance, to which the wires are conducted.

Claim.—The bar L laid transversely to the track and provided with an arm N and counterbalance weight M, for the purpose and arranged substantially as described.

No. 48,086.—WILLIAM NEVINS, Lyons, N. Y.—*Fence.*—June 6, 1865.—This invention consists in forming the sections composing the fence of slats and stiffeners strung upon wires in such a manner as to brace the sections firmly against either a vertical or lateral strain, and also in the method of constructing and arranging the posts.

Claim.—The combination and arrangement of the stiffeners *b b*, slats *a a*, and wires *c c*, substantially in the manner and for the purpose herein set forth.

Also, forming the posts B with the spurs or forks *k k* and notches *m m*, said parts being made either entirely of metal, or partially of metal and partially of wood, substantially as herein specified.

No. 48,087.—ALBERT H. NORTH, Naubuck, Conn.—*Steering Apparatus.*—June 6, 1865.—This invention consists in the use of an eccentric wheel operating upon a quadrant, also extending in the circumference of the groove in which the steering rope or chain engages; this, in addition to geared wheels, causing the motion of the wheel. The result is a change of power by change of the speed from the eccentric or cam wheels.

Claim.—The employment of the cam or eccentric wheels C E, operated by proper mechanism, substantially as and for the purpose described.

No. 48,088.—AMOS NUDD, Wampum, Wis.—*Butter-moulding Machine.*—June 6, 1865.—This invention consists of a catch and socket or notch to hold the compressing lever in place.

Claim.—In a butter-moulding machine constructed as described, the catch or hold-fast, consisting of the pawl *f* and notch *g*, arranged so as to operate substantially as and for the purpose set forth, in combination with the matrix or moulding chamber C, the two levers B E, and the expelling plunger B.

No. 48,089.—JAMES OLD, Pittsburg, Penn.—*Deep Well Pump.*—June 6, 1865.—This invention consists in arranging in a deep well pump a spiral spring within the piston to compensate for the hydrostatic pressure in lifting the valve, the same to be graduated according to the depth and the consequent pressure.

Claim.—The use of a spring so placed in combination with the upper valve of pumps for deep wells as to counterbalance wholly or in part the hydrostatic pressure of the superincumbent column of liquid, and insure the opening of the valve on the descent of the piston, substantially as hereinbefore described.

No. 48,090.—S. J. OLMSTED, Binghamton, N. Y.—*Rein Holder.*—June 6, 1865.—In this device two cylinders are used which have roughened surfaces; under these the rein is put; the cylinders are so arranged with cams that the rein cannot be drawn out; the more force used to draw it forward the tighter it is held.

Claim.—As an article of manufacture, the rein holder, constructed substantially as herein recited.

No. 48,091.—AUSTIN B. PAGE, Weaversville, Cal.—*Mode of Raising Sunken Vessels.*—June 6, 1865.—This invention consists in sinking chains at the bow and stern of a submerged vessel by means of a lever in order to facilitate dragging them under the keel by a to and fro motion, and in using the chains alternately, in pairs or singly, to support the hull during the process of raising it to the surface.

Claim.—The combination and arrangement of the lever E and the crutch G, or their equivalent, together with the cross timber I C I H C H F C F and D D D, substantially as and for the purposes herein specified and set forth.

No. 48,092.—CHARLES L. RAHMER, Brooklyn, N. Y.—*Hat.*—June 6, 1865.—In this invention a space is preserved between the spring sweat leather and the hat by means of small washers on spurs, said spurs springing from the sweat leather and passing through the hat body, outside of which they are bent down and then covered by the hat band.

Claim.—A flexible band made of metal or other suitable material, provided with a series of sharp pointed pins or other proper fastening devices, rubber, or other suitable elastic cushions, arranged together substantially as described and for the object specified.

No. 48,093.—JOHN P. RAY, assignor to himself and WESLEY W. RAY, Honeoye, N. Y.—*Sheep Rack.*—June 6, 1865.—This invention consists in the employment of two hinged racks capable of opening to admit the feed, and of closing to compress and hold it; and also a double trough or receptacle on the inside to hold grain, made in two parts, so arranged that in feeding hay they turn back against the sides to leave the central space unoccupied; but in feeding grain close together in the centre, serves to hold the same in proper position to be reached by the sheep.

Claim.—The grain trough or receptacle C constructed in sections *l l*, so arranged as to open and rest against the sides of the box, or to close centrally to feed the sheep, the same being used in combination with the box A substantially as described, in combination with the grain trough, constructed as described.

Also, the double folding and compressing racks B B, arranged and operating substantially as specified.

No. 48,094.—JACOB REDDING, New Castle, Ind.—*Mode of Operating Churns.*—June 6, 1865.—This invention consists of a spring, cord, pulley, pitman, and vertical dashers; the spring is wound up in a box, and, uncoiling, operates the churn.

Claim.—The general arrangement of the vertical dashers C D, pitman F, crank shaft G H, gearing I J K L M, drum S, cord R, pulley Q, and spring box C, all as herein described and for the purpose set forth.

No. 48,095.—W. H. REED, Philadelphia, Penn.—*Button.*—June 6, 1865.—This invention consists of a button being attached by a rivet stuck down upon the face of the button, so countersinking the back of the button as to cause the head of the rivet and back of the button to present a plane surface while clasping the cloth.

Claim.—The button A with its opening *e* countersunk on the under side of the button, substantially as and for the purpose described.

No. 48,096.—ALBERT RHOADES, Pontiac, Mich.—*Churn.*—June 6, 1865.—This invention consists in the application to a churn of a fly wheel having pivoted thereto a lever, said lever being pivoted also to a spring arm attached to the frame of the churn for the purpose of giving power to the same.

Claim.—The combination, with the balance wheel *c*, of the lever G pivoted to the crank pin of said wheel and to an elastic arm *b*, in the manner and for the purposes herein described.

No. 48,097.—STEPHEN ROSSMAN, Hudson, N. Y.—*Horse Leg Fender.*—June 6, 1865.—This invention consists of a pad or fender to fit the inside of the knee joint and ankle joint of a horse addicted to interfering; also it consists in an interlining or stiffener, and the insertion of a whalebone strip at the upper end of the fender to prevent the pad from turning round the leg.

Claim.—The former interlining or stiffener, Fig. 5, and the brace *a* when both are enclosed, combined, and arranged substantially in the manner and for the purposes herein described and set forth.

No. 48,098.—PHILIP C. ROWE, Boston, Mass.—*Piston for Pumps.*—June 6, 1865.—This invention consists in the use of a piece of leather, one or more, of cup form, and an elastic cylinder within said cups, placed on the piston rod and arranged with metal disks and nuts in such a manner that the leather cups may be expanded so as to operate tightly within the pump cylinder by compressing the elastic cylinder within them.

Claim.—The elastic cylinder C, in combination with one or more elastic leather cups F, with disks and nuts all placed on the piston rod and arranged substantially as and for the purpose set forth.

No. 48,099.—ROBERT ROWLAND, New York, N. Y.—*Manufacture of Glucose and White Lead.*—June 6, 1865.—This invention consists in the utilization of the waste vapors and gases evolved in the manufacture of glucose or grape sugar for the manufacture of white lead. The vessels in which the starch, sawdust, &c., are converted into grape sugar are closed by means of air-tight covers, and the vapors of sulphuric acid and the carbonic acid gas evolved are made to act upon the lead, said vapors and gases being conveyed to the lead by means of suitable pipes.

Claim.—The combined manufacture of glucose or grape sugar and white lead in such a manner that both articles are manufactured independently of each other, but that the waste gases and vapor arising from the manufacture of the former are used for the corrosion of lead into white lead, substantially in the manner herein described.

No. 48,100.—CYRUS W. SALADEE, Newark, Ohio.—*Snap Hook.*—June 6, 1865.—This invention consists in providing the hook of the snap with a buckle-shaped guard, to prevent the escape of the ring from the snap.

Claim.—First, the buckle-shaped guard B, with or without the spur *c*, in combination with a hook *b*, substantially as described and for the purposes specified.

Second, the buckle-shaped guard D, in combination with a hook *b*, substantially as described and for the purposes specified.

Third, the hook *o* on the end of the spring C, for the purpose described.

Fourth, the combination of a snap hook A B with a buckle H, when the buckle is provided with an extra bar I for the attachment of a strap.

No. 48,101.—N. C. SANFORD, Meriden, Conn.—*Wheelbarrow.*—June 6, 1865.—In this invention the bottom of the wheelbarrow is made to tilt, and the claim is confined to such bottom and a trussed frame.

Claim.—The combination of the trussed frame and tilting bottom, substantially as and for the purpose specified.

No. 48,102.—WM. G. SAVAGE, Clinton, Ill.—*Cultivator.*—June 6, 1865.—This machine consists of an auxiliary frame pivoted to the main frame at its front ends. Two plough standards are secured by slots, through which longitudinal cross-bars are placed. These standards are elevated and depressed by hand levers, and moved laterally by the turning of the cross-bars in their sockets. The inner frame only reaches to the axle, and is there connected with treadles working in hangers depending from the back side of the axle.

Claim.—The arrangement of the plough standards G G, shafts F F, and levers H H, placed within the frame C, which is pivoted within the mounted frame A, substantially as and for the purpose herein set forth.

Also, the connecting of the frame C to treadles I I, in the manner substantially as and for the purpose described.

Also, the combination of the two frames A C with the plough standards, treadles, and levers, all arranged to operate in the manner substantially as and for the purpose set forth.

No. 48,103.—E. T. SAWYER, Portland, Maine.—*Sail Clutch.*—June 20, 1865.—This invention consists in the substitution of an iron band for wooden hoops or rope lashings.

Claim.—First, providing on each end of a sail hank or hoop a ferrule, which is constructed substantially as described.

Second, locking the hoop or hank and clasping the rope and the sail by means of a clutch or clasp, constructed substantially as described.

Third, the two-part clasp, constructed substantially in the manner and for the purpose described.

No. 48,104.—GEORGE M. and SAMUEL H. SEWARD, Guilford, Conn.—*Seed Planter.*—June 6, 1865.—This invention consists in so constructing the hopper that it revolves with a disk beneath, combined with a plate and a stationary brush. The hopper is adjusted to or from the draught wheel by a set screw, thus tightening the belt that rotates it.

Claim.—First, constructing the hopper G so as to revolve with the disk E, when the same is combined with the plate D and the brush K, or its equivalent, substantially in the manner and for the purpose described.

Second, adjusting the hopper G, constructing and operating in the manner described by means of the screw P, substantially as and for the purpose described.

No. 48,105.—JOHN SHEFFIELD, Putneyville, N. Y.—*Deep Well Pump.*—June 6, 1865.—In this pump a solid piston rod descends through a hollow piston rod, the solid rod rising higher and descending lower than the hollow one, each carrying at its extremity a coniform valve, which is opened as the rod descends by the sleeve-like piston having freedom to lag far enough for the influx of water, the two rods moving reciprocally.

Claim.—The employment in a lift pump, with two tubular pistons D D′, of the rods E F, their lower extremities *b b*, constituting valves, and bars *d d*, substantially as and for the purpose described.

No. 48,106.—JOHN Y. SMITH, Alexandria, Va.—*Oil Ejector.*—June 6, 1865.—This device consists of a central pipe, which is used to convey steam to the different sections of the apparatus, and to prevent condensation this pipe is lined with hose. In combination with this pipe are valves and their chambers for the admission of steam from the inner pipe, which is to be condensed for the purpose of producing a vacuum for raising the oil from one section to the other. Valves are also employed for the purpose of controlling the flow of the oil and preventing its return to the lower chambers, after it has been once raised to the higher ones. These valves are operated by cams placed upon a disk, which is fixed upon and revolved with the interior pipe above mentioned, the motion of which is communicated from suitable machinery on the surface of the ground.

Claim.—First, the combination of a pipe or tube in sections of enlarged valve chambers, when arranged immediately between the tube or pipe sections, and concentrically therewith, substantially as set forth.

Second, in combination with a revolving central steam pipe and stationary outer tube, the conical valves upon the former and their valve seats upon the latter, substantially as and for the purpose set forth.

Third, the means herein described of producing condensation of steam in the chambers, for the purpose of raising the liquid or oil, by injecting or dropping a portion of the liquid raised into the said chamber, substantially in the manner herein set forth.

Fourth, the attachment to the revolving central steam pipe of a cam plate, or the equivalent thereof, in combination with stearns or projections on the valve, so that by revolving the pipe the valve shall be lifted off its seat for dropping the requisite amount of liquid for condensation of steam, substantially as set forth.

Fifth, in combination with valve chambers constructed and operated as described, the weighted valve covers, so as to close the valve opening if the external pressure of the liquid exceed that from within, substantially as set forth.

No. 48,107.—LYMAN SMITH, Erie, Penn.—*Apparatus for Making Extracts.*—June 6, 1865.—This invention consists of a vessel provided with a false bottom, and connected with a vacuum pan by means of a pipe. The vacuum pan is connected to a steam generator, by means of pipes, and is provided with an outlet pipe and a pipe through which the air is expelled.

Claim.—The combination with the tank A of a vacuum pan F, or other equivalent device for producing a vacuum, substantially as and for the purpose set forth.

No. 48,108.—SAMUEL SPENCER, Groton, N. Y.—*Threshing Machine.*—June 6, 1865.—This invention consists in the attachment of a concave to the regulating blocks, and made adjustable with the elevator of the machine.

Claim.—The concave D, when attached to the regulating and tightening blocks B B, to render it adjustable with the elevator C, when constructed and operated as above described.

No. 48,109.—ARIEL B. SPROUT, Hughesville, Penn.—*Horse Rake.*—June 6, 1865.—This invention relates to improvements in the manner of operating and pivoting the rake and attaching the teeth to the rake head.

Claim.—First, the foot lever E, so pivoted to the rake head as by being depressed to throw the rake from its elevated to its working position, and by being held down with the foot to retain the rake in its working position.

Second, attaching the fulcrum bar F to the cleaners or other rigid parts of the rake by means of straps *g*, connecting the two parts of a hinge joint, so as to allow a limited amount of vertical play to the bar F, for the purpose described.

Third, in combination with the straps *g*, the movable rings, or their equivalent, for the purpose of preventing the vertical play of the bar F, relatively to the cleaners, under the circumstances described.

Fourth, the extension in front of the axle of the cleaners G, which support the rake head, so as by their vertical adjustment to regulate the height of the rake head from the ground at a given elevation of the shafts.

Fifth, the rotating notched pintle bolt H *h'*, with grooves therein corresponding to similar grooves on the lug H', for coiling the rake teeth until the requisite force is attained, and for holding the tooth when coiled in position under the action of the nut on the bolt.

No. 48,110.—ALBERT STEDMAN, Homer, N. Y.—*Upsetting Tire.*—June 6, 1865.—In this invention a pair of forked arms are pivoted together in such a manner as to be placed in an upright position in a common vice, the forked arms passing astride of the screw of the vice. Upon the top of the arms is attached the usual apparatus for clamping tire for upsetting. The screwing up of the vice performs the operation of upsetting.

Claim.—The machine or apparatus as a whole, when used in connection or combination with any vice, as and for the purposes above set forth.

No. 48,111.—GEORGE HAYWARD THOMAS, New York, N. Y.—*Carriage Axle.*—June 6, 1865.—This invention consists in forming at or near the outer end of the axle shaft, and extending entirely around the same, a square groove, in which groove, after the wheel has been placed upon the axle, a similar shaped collar or ring, made in two parts and of a greater thickness than the depth of the groove, is fitted. The wheel is brought to a bearing by means of a screw nut placed upon and moving body of the axle, and acting upon the inner surface of the wheels.

Claim.—The mode herein described of securing a wheel upon its axle, the same consisting in the use at the outer end of the axle of a detachable or movable collar or ring, in connection with a nut, the two being arranged together and operating substantially in the manner herein above set forth.

No. 48,112.—J. H. THOMAS and P. P. MAST, Springfield, Ohio.—*Drag Bar for Grain Drills.*—June 6, 1865.—This invention consists in so fastening an arm and lug to the bar, that the arm will always be kept in contact with the upper end of the tooth, even after breaking of the wooden fastening pin.

Claim.—So constructing the arm F and lugs *i*, that when the pin *g* is in place the said arm will be maintained in position in contact with the face *e*, substantially as set forth.

No. 48,113.—EDWIN THOMPSON, Abington, Mass., and L. N. MEARS, Brooklyn, N. Y.—*Manufacture of Machine-sewed Shoes.*—June 6, 1865.—This invention consists in the preparation of a shoe for the sewing process by lasting it and temporarily securing the outer sole to the vamp, without the use of an inner sole. The vamp being formed, the last is placed therein, the edges of the vamp being drawn over the bottom surface of the last, in which position the vamp is held by thin plates or springs, to hold or support the last and vamp together for the outer sole, which is then secured by a number of small tacks.

Claim.—The process or method of temporarily uniting the vamp and sole of a shoe for their subsequent union by stitches, substantially as set forth.

No. 48,114.—JONATHAN G. TIBBETS and W. M. MERRIEL, Jeffersonville, Ind.—*Axle for Wheel Vehicles.*—June 6, 1865.—This invention consists in a construction of the axle as described in the claim whereby the same is rendered strong and durable, and at the same time light and capable of being kept perfectly lubricated, so as to run with but little friction.

Claim.—A divided axle, or one composed of two parts A A', connected by a bridge or skeleton hub, composed of the heads B C D, and brace rods E, arranged and applied to the axle in the manner substantially as and for the purpose herein set forth, and the ends of the parts A A', fitted together by a cone joint.

Also, providing the heads B D with radial openings or air passages, and having said heads bushed with Babbitt metal, substantially as herein described.

No. 48,115.—W. B. TREADWELL, Albany, N. Y.—*Coal Stove.*—June 6, 1865.—In the upper part of this stove is an oven with a double bottom, in which is a hole filled with a double-walled cover. The fire-pot is made of fire-brick and cast iron; a section of the cap ping of the brick is removable, so that the bricks can be easily reached when necessary. Air chambers surround the fire-pot, and communicate with air chambers in the bottom of the stove, opening to the external air, and also with the double bottom of the oven by the passage

surrounding the combustion chamber. From a chamber around the top edge of the fire-pot, air is jetted on the fire. Through perforations in the upper bottom plate of the oven the heated air circulates, passing off through perforations in the top of the stove.

Claim.—First, a parlor-heating stove, with an oven for cooking purposes, so constructed that hot air circulates in a chamber formed in the bottom of the oven, and also through the chamber of the bottom of the oven, substantially as and for the purposes described.

Second, the construction of the oven, which is a component part of a stove, with a double bottom, a double-walled hole coverer and circulating passages for hot air, substantially as and for the purposes described.

Third, the fire-pot or chamber C *c l f*, constructed as represented in Figs. 1 and 2, and substantially as herein described, for the purpose set forth.

Fourth, the combination of the plate H, with removable section *u'*, and a fire-pot having a removable sectional lining *f*, substantially in the manner and for the purpose described.

Fifth, the combination of fire chamber C, cavity *g g*, cold-air passage *o o*, and receiver E, substantially in the manner and for the purpose described.

Sixth, the cold-air passage, formed by means of plates *b b* and *c*, connected with cavity *g g*, in combination with the ring or receiver E, tubes *s s*, and oven D, all constructed and arranged substantially as described.

No. 48,116.—ALBERT VAN WAGENEN, Boston, Mass.—*Window Blind.*—June 6, 1865.—This invention consists in the construction of a blind, so as to admit of the ready removal of the slats without dismembering the frame; also, in the adjustability of the slats and the maintenance of them immovable in any position or inclination.

Claim.—First, the method herein described of constructing window blinds so as to admit of the ready removal of the slats, in the manner and for the purpose set forth.

Second, the method described of maintaining the slats of window blinds at any given inclination with respect to the frame by the means and in the manner herein set forth.

No. 48,117.—A. H. WAGNER, Chicago, Ill.—*Seed Drill.*—June 6, 1865.—In this device the upper part of the seed tube is automatically vibrated, and by means of a partition pushes off the seed from the concave trough of the lower part of the seed tube.

Claim.—The vibrating feeding tubes H, provided with a partition across the lower end to stir the grain and feed the drilling tubes.

Also, in combination with the vibrating feeding tubes H, the receiving cups R, with curved inner bottoms to hold the seed until it is pushed off by the vibrating tubes, substantially as described.

Also, the hook on the lever which raises the link from the wrist pin simultaneously with the raising of the drilling teeth.

No. 48,118.—SYLVENUS WALKER, New York, N. Y.—*Vegetable Slicer.*—June 6, 1865.—This invention consists of a piece of tin or other metal so formed and bent that a common table knife can be used with it as the cutter, and the thickness of the slice graduated by a set screw.

Claim.—The guides *b b'*, forming the sides of the knife stock A, with the adjustable mouth-piece B, and spring C, when formed of one continuous piece of metal, substantially as described.

No. 48,119.—CHAUNCEY WALTON, Washington, D. C.—*Cigars.*—June 6, 1865.—Cigars are constructed with a central perforation from end to end, so that they will always smoke freely and burn uniformly; they are provided with a mouth-piece containing sponge or an equivalent absorbent, to retain all nicotine and empyreumatic odor, and to prevent the same from coming in contact with the mouth or lips of the smoker.

Claim.—The new article of manufacture herein described, made in the manner and for the purposes substantially as set forth.

Also, a longitudinally perforated cigar, combined with a sponged mouth-piece, as and for the purposes set forth.

No. 48,120.—H. W. WARNER, Greenfield, Mass.—*Throttle Valve Gear.*—June 6, 1865.—The object of this invention is to operate and control the throttle valve of steam-engines with greater facility and accuracy than with the means commonly used; it also consists in a peculiar arrangement of the female and male screws.

Claim.—The combination and arrangement of the male and female screw F, male screw B, and nut E, for the purpose of operating and controlling the throttle-valve of a steam-engine, substantially as herein set forth.

No. 48,121.—H. W. WARNER, Greenfield, Mass.—*Lever Buckle.*—June 6, 1865.—This invention consists in attaching to the sides of the lever, projections constituting handles, by which the lever is raised and the strap released.

Claim.—The projections or handles *b*, one or more, in combination with the tongue of a lever buckle, substantially as and for the purpose herein set forth.

No. 48,122.—JONATHAN WHEELER, Athol, Mass.—*Boot-jack.*—June 6, 1865.—This device is so constructed and arranged that when the heel of the boot, to be drawn off the foot, is placed between the jaws, the toe of the other foot is brought down upon the platform, and raises its inner end against the under side of a pair of arms, which are thereby raised, this operation causing the heel of the boot to be clamped, when the foot may be drawn out of the boot.

Claim.—The boot-jack herein described, consisting of the fixed platform A, vibrating platform B, supported upon pivot pins C C, and provided with a projection *c*, curved jaws D D, approaching each other longitudinally, arms *a a*, standards *b b*, and slots *d d*, the whole constructed and arranged as set forth.

No. 48,123.—ALBERT WILLIAMS, Norwich, Conn.—*Knob Latch.*—June 6, 1865.—In this device there are two bolts, one an ordinary spring bolt, operated by the knob arbor in the usual manner, and the other a dead-latch bolt, operated from the outside by a key, which is passed longitudinally through the knob and arbor.

Claim.—The arrangement of the slotted arbor with the dead and slide latches and knob, substantially as shown, so that the dead-latch may be operated or thrown back by the insertion of the key through the knob and arbor while the latter is used for operating the slide latch, as described.

No. 48,124.—J. D. WILLOUGHBY, Washington, D. C.—*Device for Steering one Boat from Another Boat.*—June 6, 1865; antedated November 24, 1864.—This invention consists in steering or directing torpedo boats, and the like, from the vessels from which they are despatched, by means of extended cords.

Claim.—Attaching the steering cords *f f* to the cross tiller *c*, or rudder B, and passing them around some point on the boat, so as to cause the tension of either cord to pull the rudder into a position that will incline or steer the boat in the same direction that it is inclined by the tension of the cord, substantially as described and represented.

No. 48,125.—THOS. B. WILSON and WM. R. SHAW, Meadville, Penn.—*Boiler Furnace.*—June 6, 1865.—This invention consists in the arrangement within the furnace of a boiler, of a deflector, which is operated by means of a lever, in such a manner that the air can be directed upon any part of the burning fuel, and thus made to thoroughly mix with the gases arising therefrom. The air is conveyed to this deflector through a conduit formed on the outside of the boiler, and underneath the furnace door, the frame of which is cut away to admit it.

Claim.—First, the deflector C, arranged as shown within the furnace, and operated by means of the hand lever A without, substantially as above described.

Second, the combination of the deflector C with the door space of the furnace, and the air box E, opening into said space, substantially as above described.

No. 48,126.—J. N. WOODWARD and W. HOLDEN, Aurora, Ill.—*Sash for Roofs of Hothouses.*—June 6, 1865.—This invention consists in covering the upper or outer portion of the sash with sheet metal strips, and using in connection therewith putty or other suitable cement, whereby the sash is rendered perfectly tight and weather-proof, and more durable than in the common mode of glazing the sash.

Claim.—The sheet-metal strips, constructed with gutters *c c*, and employed in combination with the sash A, glass B, and putty or luting *b*, in the manner and for the purposes described.

No. 48,127.—JOSEPH BUCKETT, assignor to himself and L. W. WARNER, New York, N. Y.—*Bread-cutter.*—June 6, 1865.—The cutter is made of circular form, attached eccentrically to a shaft placed on a suitable framing, the cutter working between plates which have an opening made in them, into which the article to be cut is fed to the cutter, the table or frame on which the article being cut is placed having a holder applied to it, composed of a series of jointed plates.

Claim.—The combination with the eccentric circular cutter D, projecting plates E E, shaft B, opening F, of the holder G, composed of a series of plates *a*, connected by joints *b*, substantially as and for the purposes described.

No. 48,128.—MILLS L. CALLENDER, assignor to the CALLENDER LAMP MANUFACTURING COMPANY, New York, N. Y.—*Lamp.*—June 6, 1865.—This invention consists in sustaining the cone by bent supports, to decrease the transmission of heat; also, in a plate extending across the deflector, having an opening with lips, composing an inner deflector, and flame spreaders at its ends, and an elastic ring for opening for the oil, in combination with slide rods to elevate the burner.

Claim.—First, sustaining the cone or deflector by supporters that are bent or folded, to increase their length, for the purpose and substantially as specified.

Second, the plate *h*, extending across the deflector *g*, and having an opening with lips 1 1, composing an inner deflector, and formed with the flame-spreading projections 2 2, as and for the purposes specified.

Third, the elastic ring *a*, with an opening through which to fill the lamp, in combination with the slide rods *c c*, carrying the burner, as set forth.

No. 48,129.—ROBERT DRAKE, Newark, N. J., assignor to himself, JAMES F. BLESS, and DANIEL F. BLESS.—*Sad Iron.*—June 6, 1865.—In this invention, the bottom of the heating chamber has an inclined or curved guiding surface, divided towards the front by longitudinal partitions. The gas strikes on a plate projecting slightly from the under side of the top plate, and thence the products of combustion are thrown over the whole chamber, and find their way to the exit pipe in front.

Claim.—Constructing the bottom of the heating chamber of a sad iron with an inclined or curved guiding or deflecting surface *r s s*, adapted to operate as herein described.

No. 48,130.—JOHN GROSS, Decatur, Ill., assignor to himself and THOMAS K. ALEXANDER.—*Corn Planter.*—June 6, 1865.—In this invention a circular intermittingly rotating plate is provided with openings, in combination with vibrating seed plates; underneath are placed circular gauges for varying the capacity of the holes. The cut-offs are held in position by elastic, horizontal bars.

Claim.—First, the employment or use of the circular intermittingly rotating plates N, provided with openings or holes *j j*, in combination with the vibrating seed plates M, substantially as and for the purpose described.

Second, the vibrating bars O, placed below or underneath the plates N, connected with the plates M, and receiving their motion therefrom, and provided with pawls *m*, for the purpose of operating the plates N, as set forth.

Third, the circular gauge P, placed underneath the plates N, and arranged substantially as shown, for graduating the capacity of the holes *h* in the plates M, as set forth.

Fourth, the arranging of the cut-offs or strikes *d*, with springs or elastic rods N′, in the manner substantially as and for the purpose specified.

Fifth, the scrapers A A, at the outer ends of arms R R, which are connected by rods *t* to treadles *u*, substantially as and for the purpose specified.

No. 48,131.—IRA HOLMES, Moscow, N. Y.—*Petroleum Stove.*—June 6, 1865.—In this invention between and around the edges of two circular plates are oil reservoirs, into which the wicks descend from burners fitting into apertures in the upper plate. Over the burners are inverted conical cylinders, in the top of which are cooking vessels. A flue from the top of each cylinder carries off the smoke, &c., into a central pipe. There is a wire gauze in the lower part of the central pipe, and from each of the oil reservoirs a tube leads into a central pipe, below the gauze, to carry off the gases generated by the heat. The cylinder may have mica doors.

Claim.—First, concentrically arranged lamps or burners, with the rotary platform A C, combined and arranged substantially in the manner and for the purpose set forth.

Second, the pipes *b*, leading from each reservoir into the main pipe B, carrying off any vapor or gases into the same for safety.

Third, the jacket heaters or cylinders, with side flues *f* discharging into a central pipe B, constructed as and for the purpose set forth.

Fourth, the wire gauze *c*, located in the central pipe B, above the entrance of pipes *b*, for the purpose set forth.

Fifth, the combination and arrangement of the several parts described, operating in and for the purpose substantially as set forth.

No. 48,132.—HELEN M. JEWETT, assignor to UNIVERSAL SAFETY MATCH COMPANY, Roxbury, Mass.—*Safety Match Holder.*—June 6, 1865.—In this invention the safe is made in three compartments, the forward and larger one to hold a supply of patent safety matches, the second to contain a store of the cards, on which the matches must be ignited, and the third is a receptacle for waste matches. All of these compartments have lids, the lid on the third receptacle being made so large as to overlap the second when they are shut. The igniting cards when in use are attached to the sides of the safe.

Claim.—A safety match box or holder composed of the match pack and waste receptacles A B C, and one or more igniting card-holders D, the whole being for use as specified.

Also, the match safe made of the three receptacles A B C, and one or more card-holders D, and having the cover *c* of the rearmost receptacle so constructed as when closed down upon the cover *b* of the pack receptacle it shall entirely overlap it, as set forth.

Also, the match safe as not only made with a match pack, waste and igniting card receptacles, but with separate covers to the waste and pack receptacles, the same being in order that the pack receptacle may be protected from fire or sparks dropped from a match while in the act of being moved over the pack receptacle for the purpose of being inserted in the waste receptacle.

No. 48,133.—WILLIAM MORGENSTERN, assignor to himself and WM. B. WILSTACH, Philadelphia, Penn.—*Breech-loading Fire-arm.*—June 6, 1865.—In this invention the breech-block, which is retracted longitudinally, has a shoulder at its rear end, which, resting in a

recess in the stock, has an abutment against the recoil. The hammer, on being cocked, first raises the rear end of the breech-block out of its seat, and then retracts it sufficiently to allow the removal and insertion of a cartridge. By means of a tripping catch on the breech-block, the said breech-block may be pressed forward to its closed position, without disturbing the set of the hammer, at full or half cock.

Claim.—First, raising the rear of the movable breech from its engagement and retracting it by means of the tumbler lever H, operated by the hammer in the act of cocking.

Second, the lifting and retracting lever H and the tumbler in one piece.

Third, the swinging cam or lever J, constructed and arranged substantially as and for the purpose set forth.

Fourth, the combination of the breech-piece C, cam J, and tumbler lever H, operating in the manner substantially as described.

No. 48,134.—DANIEL REED, assignor to AMOS A. TAYLOR, New York, N. Y.—*Roll for Machines for Preparing Fibrous Material for Spinning, &c.*—June 6, 1865.—In this invention the leather covering hitherto used is caused, by the application of a high degree of pressure, to adhere to the elastic body, forming a united whole, instead of remaining loose thereon, and liable to a friction between them.

Claim.—Covering rolls for preparing materials for spinning yarn and manufacturing cloth with an inner covering of vulcanized rubber, gutta-percha, or other suitable gums, and with an outer covering of leather parchment, paper, or the equivalent of either of these two coverings, being united together in the manner as and for the purpose described.

No. 48,135.—JOHN E. SMITH, assignor to himself and HENRY C. GRIGGS, Waterbury, Conn.—*Buckle.*—June 6, 1865.—This invention consists in making the buckle of three pieces of sheet metal, swaged or cut into shape; one piece forming the frame, having a bar across it, which serves as the stationary part of the hinges, and two projections or rests, another piece forming the tongue, and the third piece forming the hook.

Claim.—The combination of the frame *a* with the tongue *g* and the hook *h*, when the tongue and hook vibrate separately and on independent hinges or joints, though on the same bar, as herein described.

No. 48,136.—CHARLES THACHER, assignor to himself and GEORGE SHOVE, Yarmouth, Mass., and assigned by said THACHER to LUTHER W. CLARK, Boston, Mass.—*Cranberry Gatherer.*—June 6, 1865.—This invention consists of a bottom and two sides provided with fingers and a receptacle behind them. A rake, with the teeth meeting the fingers of the bottom piece, is pivoted near the front part of the receptacle. The fingers are thrust into the vines, and the rake thrust down upon them, and by withdrawing the instrument the berries are stripped from the vines.

Claim.—The combination of the holding comb C with the receiver A, provided with teeth, substantially as described.

Also, the combination of the grate or sieve B, the holding comb C, and the receiver A, provided with the teeth, substantially as described.

No. 48,137.—THEOPHILUS VAN KANNEL, Cincinnati, Ohio, assignor to himself and JOSEPH BEAIRE, Chester, Ill.—*Cherry-stoning Machine.*—June 6, 1865.—This machine is for the purpose of stoning cherries, and consists of devices that force the stone or pits from the pulp, and discharge the pits in one direction and the pulp in the other.

Claim.—First, so applying the needle carrier *g* to a reciprocating slide that the needles *h* will discharge the pits from the pulp and then assist in discharging the pulp from the machine, substantially as described.

Second, in a machine for stoning cherries, which has a rotary driving shaft, giving a lateral motion to the needle carrier in the act of removing the pulp from the basin, substantially as described.

Third, constructing the needle carrier with a nose *g'*, for the purpose substantially as described.

Fourth, the feeder *b*, arranged to work between the hopper A' and the basin *a*, substantially as described.

Fifth, the employment of an elastic perforated bottom for the basin *a*, substantially as described.

Sixth, the arrangement of the hopper A', feeder *b*, basin *a*, and discharging spout A2, so that cherries will be moved from one to the other of these contrivances, deprived of their pits, and discharged from the machine, substantially as described.

No. 48,138.—JAMES W. WESTON and THOMAS B. STANLEY, New York, N. Y., assignors to JAMES W. WESTON.—*Artificial Legs.*—June 6, 1865.—This invention consists in a peculiar construction of bolts for connecting the foot to the limb at the ankle-joint, and an India-rubber spring, made to set between the foot and limb, and perforated to render said rubber less rigid at particular places, so that the foot will yield to inequalities of the ground. Knee pieces or side supports are also employed to relieve the stump below the knee of sudden strain or wrenching.

Claim.—First, a bolt formed with two joints at right angles to each other, and secured to the leg and foot respectively, as set forth, so that the foot cannot turn out of its place, but motion is allowed at the ankle, as specified.

Second, the India-rubber block perforated with holes or formed with cavities at those points where the spring is required to be most yielding, the same being introduced at the ankle joint, as specified.

Third, the side knee-pieces extending from the artificial limb, as and for the purposes set forth.

Fourth, the band for attaching the artificial limb, consisting of the strap *l* and *m* and intermediate laced strap or webbing *n*, for the purposes and as specified.

No. 48,139.—ROBERT WYATT, assignor to himself and W. LARDER, Brooklyn, N. Y.—*Steam Engine.*—June 6, 1865.—This invention consists in connecting the two pistons with a crank outside of the cylinder by means of a piston rod, which is attached to the inner piston, and passes through the outer piston, and which has a longitudinal movement with the inner piston, and a lateral movement with the two pistons. A stuffing-box is provided through which the piston-rod works, and which slides in a slot on the outside of the steam chest, for the purpose of providing for its lateral motion.

Claim.—First, connecting the two pistons B C with a crank outside of the cylinder by means of a piston-rod D, which is attached to the inner piston C, and passes through the outer piston B, and which has a longitudinal movement with the inner piston C, and a lateral movement with the two pistons B C, substantially as and for the purpose herein specified.

Second, the stuffing box E through which the piston-rod D works, attached to the outer piston B, and working in a slot *f* in the cylinder, substantially as and for the purpose herein set forth.

Third, the sliding plate F and its socket F*, fitting the stuffing box E, and working within a groove or guide *g* on the exterior of the cylinder, substantially as and for the purpose herein set forth.

Fourth, the combination of the slide valve M and the two connected slide valves N″ N3, the three worked by two eccentrics Q S, and operating as described in relation to a system of ports *o o′ o2 o3 p s′ s3*, arranged substantially as herein specified.

No. 48,140.—JOHN MARSHALL, Pentonville Road, England.—*Oil Presses.*—June 6, 1865; patented in England October 27, 1863.—In separating oils from seeds and other oil-yielding substances, they are at the same time strained or filtered, the seed being pressed by a hydraulic ram or piston, or any other power, against a hollow plug, the face of which carries a perforated block, provided with layers of wire gauze, perforated metal, textile or porous fabric, or other suitable straining or filtering material.

Claim.—The expression of oil from oil-yielding substances, and the production of oil-cake and other residuary matter by means of a chamber, in combination with a ram and plug and a strainer or filter, these parts being constructed and acting substantially as described.

No. 48,141.—MANUEL J. LOPEZ Y MANOZ, Havana, Cuba.—*Machine for Making Cigarettes.*—June 6, 1865.—This machine smooths the paper, cuts it to the required length, spreads the tobacco and rolls the cigarette, neatly folding the ends of the same. The claim and the engraving fully explain the invention.

Claim.—First, the arrangement of the feeding rollers G G′ connected together and pressed together in the manner specified, and worked by means of gearing, in the manner and for the purpose substantially as described and set forth.

Second, the arrangement and combination of the cutting bar K and knife L, worked by means of a segment L′, in the manner and for the purpose substantially as set forth.

Third, the manner of working the forming rollers *v w* by the pinions 12 13, in combination with the pinion 14, when said pinions 12 13 form part of the surface of said rollers.

Fourth, the arrangement of the frames X X′, swinging upon central slides *y*, attached to the frames of the machine, and secured in place during the operation of the machine by spring levers *r′* and a lever E′, acted upon by a cam F′ in the manner specified.

Fifth, the arm *q* and the pin *q′* or their equivalent, acting upon the spring levers *r′*, for the purpose of disengaging the same, in combination with the pin or projection *p′*, acting upon an arm *p*, fast to the said frames X or X′, for the purpose of swinging said frames around central studs *y*, the whole operating together in the manner and for the purpose described.

Sixth, the wheel W′ acting upon the pinion W″ and the pinion 5, operating, through the pinions 4 and 6, the forming rollers in the manner substantially as described.

Seventh, the forming levers N attached to a crank shaft O, and operated by teeth 24 25 26, and pins or projections 27 28 29 30 and 31, in the manner and for the purpose substantially as specified.

Eighth, the arm *b* in combination with the spring lever *x* and the cam *n*, in combination with the lever *n′* acting on the crank shaft O and the forming lever N in the manner described and set forth.

Ninth, the lever T acting upon the forming lever N, and operated by arms or cams U and U′, substantially as specified.

Tenth, holding the rolled cigarette firmly in its place while the ends of the paper are closed by means of the lever T, operating in the manner specified.

Eleventh, the levers Q operated in the manner specified or its equivalent, for the purpose of turning down the upper parts of the paper at the ends of the cigarettes.

Twelfth, the levers R′ R′, operating and arranged in the manner and for the purpose substantially as set forth.

Thirteenth, rolling the cigarette by the combined action of the rollers *v w v′ w′* and a lever N, as described.

Fourteenth, holding firmly the paper while being cut by the action of the knife L by means of the feeding rollers G G′, and by the forming lever N, while the latter is acting upon the tobacco, and distributing the same evenly on the paper.

Fifteenth, the combination of the feeding rollers G G′, the bar K and knife L, the forming rollers *v w v′ w′*, the forming bar N, the lever T, the levers Q Q and the levers R′ R′ when arranged, combined and working together in the manner and for the purpose substantially as set forth and described.

Sixteenth, the construction of the wheels H W′ E and W attached to the driving shaft, and operating the different parts of the machine in the manner and for the purpose as set forth.

No. 48,142.—James Wood, Nottingham, England.—*Lamp Burner.*—June 6, 1865.—This invention consists in a combination of several devices to facilitate the action of a sliding door in the shell of a lamp burner to insert a match.

Claim.—The combination of the door B *e e*, thumb-piece *e**, stops *g h*, (all made out of one piece of metal,) with the guides *f*, the latter being formed of strips or pieces of the shell *a* of the burner, in the manner and for the purpose herein described.

No. 48,143.—Philo P. Stewart, Troy, N. Y.—*Coal Stoves.*—June 6, 1865.—A chamber surrounding a perforated tube is placed immediately over the top of the fire chamber, for the purpose of bringing a current of atmospheric air in as cold a condition as possible in contact with the smoke and gases from the fire, so that the same shall be arrested and burned.

Claim.—First, the employment of the perforated cone or cap F, constructed, arranged, and combined with the said plates C and D, and with the fire-pot and combustion chamber of a stove, in the manner and for the purposes substantially as herein described and set forth.

Second, the employment of the wire-gauze door P, or its equivalent, in combination with the said perforated cone or cap E or any equivalent therefor, and with the said radiating chamber B′, in the manner and for the purposes substantially as herein described and set forth.

Third, the perforated cone or cap E, constructed and arranged in sections *a b c*, with small apertures between each section or division, in the manner and for the purposes substantially as herein described and set forth.

Fourth, the arrangement and employment of the inner vertical tube or conical cylinder L and the outer vertical tube or cylinder E, in combination with the radiating chamber B′, and with the horizontal flue *g g*, in the manner and for purpose substantially as herein described and set forth.

Fifth, the arrangement and combination of the vertical radiating tubes or columns G G G G, with the return flues *e* and *f*, in the manner and for the purpose substantially as herein described and set forth.

Sixth, the said flanges *i*, constructed and arranged upon the outside of the said perforated cone or cap E, in the manner and for the purpose substantially as herein described and set forth.

Seventh, the combination of the said perforated cap or cone E or its equivalent, with the air chamber surrounding the chamber of combustion, and communicating with numerous apertures, and the said wire-gauze door P, in the manner and for the purposes substantially as herein described and set forth.

No. 48,144.—Joshua G. Allen, Philadelphia, Penn.—*Air-tight Stove.*—June 13, 1865.—This invention consists in surrounding the sheet-iron base of an air-tight stove with a cast-iron base, for the purpose of giving it greater solidity and firmness, and also of increasing its capability for ornament without interfering with its air-tight properties.

Claim.—Enclosing the air-tight chamber forming the base of a sheet-iron stove in a case of cast iron, substantially in the manner and for the purpose set forth.

No. 48,145.—James B. Amos, Lower Chanceford, Penn.—*Grain Drill.*—June 13, 1865.—In this machine the forward axle is pivoted in the centre, and connected at each end with the frame by side links inclining forwards and downwards from the truck, in such a manner that pressure upon either handle guides the drill in the opposite direction. The guano box is furnished with a stationary cleaning blade, along which the seed slide moves by a slot. The rear operating wheel has double tires, the outer one of which is in sections, and can be drawn out from the inner one, and held in position by a nut or wedge, thus enlarging the diameter of the wheel.

Claim.—First, connecting the forward wheels when mounted upon one and the same axle to the truck or frame by means of a central vertical pin, in combination with side links attached to either side of theframe or truck and to the axle next to the wheels, so as to diverge, inclining forward and downward from the truck to the axle, substantially in the manner and for the purpose set forth.

Second, in combination with the cup slide valves, stationary cleaning blades penetrating a longitudinal slot in the valve-bar traversing the cups, substantially as set forth.

Third, in combination with operating the slide valves, the means herein described of enlarging or diminishing the diameter of the said wheel, in the manner and for the purpose herein set forth.

No. 48,146.—MARSHALL L. BABB, Cape Elizabeth, Me.—*Caster for Furniture.*—June 13, 1865.—This invention consists in so constructing the spindle of the caster, and the cylinder in which it plays, that the caster may be inserted, or removed, by pushing or pulling with the hands, and yet be firmly in the socket, so that it will not fall out.

Claim.—As my improvement, the slotted and bulbous-headed spindle *c c*, in combination with the cylinder *b*.

No. 48,147.—THOMAS and JOHN BARBER, Brooklyn, N. Y.—*Stuffing Box for Valve Spindles.*—June 13, 1865.—This invention consists in constructing stuffing boxes for spindles of valves in such a manner as to dispense with the system of packing stuffing boxes with hemp or similar stuffing material, and yet insure a tight joint.

Claim.—First, the combination with the annular valve E, socket B, and valve stem D, of the gland A and collar A′, when constructed and arranged to operate in the manner and for the purposes herein set forth.

Second, the combination of the guides or snugs *a a*, on the collar A′, with the straight sides of the valve-spindle, substantially as above described.

Third, the lubricating device above shown, and its channel *d*, in combination with the socket in which the valve spindle works, substantially as described.

No. 48,148.—WILLIAM S. BELL, Boston, Mass.—*Paper Collar.*—June 13, 1865.—In this invention the band is formed two-fold, and doubled on itself, so that the button holes register, and the upper edge serves to press the collar part out.

Claim.—First, doubling the thickness of the band, and connecting the folds together, substantially in the manner set forth.

Second, folding the collar upon the line *b*, by making the edge *a* the guide in such operation.

No. 48,149.—NOAH BENNETT, Sherman, N. Y.—*Machine for Coring, Slicing, and Stringing Apples.*—June 13, 1865.—This invention consists of devices that can only be understood by reference to the specification and drawings.

Claim.—The combination and arrangement of the piston or follower, raised by a spring, and composed of a driving head *g*, core-depressing projection *h*, and centring point *i*, with the cutting, coring, and stringing device, all substantially as herein specified.

No. 48,150.—WILLIAM BLESSING, Jeffersonville, Ohio.—*Corn Planter.*—June 13, 1865.—This invention consists in connecting the tooth to the seed-box, by means of a screw thread on the end of the former, and having the seed-slide on a line with the plane of the trigger; and also in providing half of the circumference of the aperture in the slide of soft metal, whereby it may be enlarged.

Claim.—First, the tooth C D, and seed-box F *f*, secured to each other and to the beam by the operation of a single screw, substantially as set forth.

Second, the obliquely-floored seed-box F, connected to the tooth by the oblique boss *f*, and having its slide reciprocated in the plane of the trigger, substantially as set forth.

No. 48,151.—CHARLES B. BROOKS, Auburn, Me.—*Baling Press.*—June 13, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—The wheel G, on the upper end of the screw E, in combination with the friction wheels H H, when the latter are placed in an adjustable loaded frame, and rotated in reverse directions from a shaft K driven alternately by a straight and cross belt, and all arranged substantially as and for the purpose set forth.

No. 48,152.—CHARLES E. BROWN, Owego, N. Y.—*Show-case for Cigars and Tobacco.*—June 13, 1865.—This invention consists of a circular case with a glass top or cover, and an opening for a slide or door; within this case is another of circular form divided into several compartments, and arranged to revolve upon its centre, so that each compartment may be brought underneath the door or slide in the outer case, for the purpose of enabling the person purchasing, to select the kind of cigar he wishes, without uncovering the cigars in the other compartments. The door is secured by a lock.

Claim.—A show-case for cigars and tobacco, constructed substantially as herein shown and described.

No. 48,153.—L. C. CHASE, Boston, Mass.—*Method of Attaching Loops to Buckles, &c.*—June 13, 1865.—This invention consists in confining the buckles to straps by clasps, which are slipped on or over the straps into the proper position, and then compressed and partially embedded in the same; said clasps being provided with a prong, to be forced into the strap, and thereby prevent the clasp from slipping.

Claim.—First, confining buckles, loops, and rings to straps, by means of a clasp or band, substantially as and for the objects specified.

Second, constructing the clasp or band in one piece, with the loop, substantially as and for the purpose described.

Third, the prong *f*, in combination with the clasp, substantially as set forth and for the purpose described.

Fourth, constructing one side of the clasp opposite the prong *f*, in two parts, substantially as and for the purpose described.

No. 48,154.—JOHN H. COBURN, Lowell, Mass.—*Shuttle for Looms.*—June 13, 1865.—This invention consists in a method of securing the tips of shuttles, so that they may sustain the violent blows and shocks given to them in weaving, without becoming loose and falling out, and whereby also the shuttle will be strengthened and prevented from being split.

Claim.—Securing the tip of the shuttle, by means of its screw-threaded shank *b*, which screws through the transverse plug *c*, substantially as above described.

No. 48,155.—DANIEL C. COLBY, Claremont, N. H.—*Improvement for Distributing Fertilizers to Growing Plants.*—June 13, 1865.—This invention consists in a distributer, having an inclined bottom, and divided in the centre by a partition, in connection with an adjustable handle, and sliding door, for the purpose of shutting or opening the orifice for the discharge of the contents.

Claim.—The combination of the inclined button B, the stay *g*, the temporary partition J, and the standard E, with the box A, as and for the purposes set forth.

No. 48,156.—DANIEL C. COLBY, Claremont, N. H.—*Flour Sifter.*—June 13, 1865.—This invention consists in the manner in which the stirrer is formed for spreading the flour over the sieve, being composed of a bar with strips, and a curved arm, the whole being operated by a crank and handle.

Claim.—The arrangement of two or more strips E E upon the underside of the bar D, substantially as described, and the combination of the said bar D, and the cross piece F, as and for the purposes set forth.

No. 48,157.—J. A. COLEMAN, Providence, R. I.—*Machine for Making Clinch Rings.*—June 13, 1865.—In this machine the die which forms the external bevel, and the punch which forms the internal bevel, or countersink, are attached to the end of the sliding plunger. The punch works through the axis of the die with an independent movement, peculiarly related to that of the die, and so that while the two act together, or in conjunction, imparting to the ring the proper form, they act independently of each other in disengaging the finished ring.

Claim.—The method of forming "clinch rings," or other similar articles, by the use of a pin, in combination with a die, both acting in the manner substantially as and for the purpose set forth.

No. 48,158.—JOHN COSFELDT, Philadelphia, Penn.—*Low-water Detecter.*—June 13, 1865.—The object of this invention is to avoid the explosion of steam generators by reason of low water in the generator, and to insure notice of the diminution of water to a dangerous degree, by the sound of an alarm steam-whistle. Its novelty consists in the combination and arrangement of the tube, pipe, float-lever, valve, whistle, gauge-cock, blow-off-cock, the pin which passes through the lever, and the pipe.

Claim.—First, the tube A, or its equivalent, forming a passage between the interior of the boiler and the pipe B, through which the end of the float-lever H, or equivalent device, connected to and operating the valve E, may project into the boiler, substantially as specified.

Second, the alarm whistle G, and the valve E, gauge-cock C, blow-off-cock Y, and float-lever H, combined with the four-way pipe B, substantially as set forth for the purpose described.

No. 48,159.—JOHN CRANE, Glover, Vt.—*Wool Press.*—June 13, 1865.—This invention consists of two boards, hinged at one side to a frame, so as to be turned up. Having been turned up, wool is to be placed between them. Standards are then caused by a windlass to approach each other between the boards, and compress the wool.

Claim.—First, the machine or combination, substantially as described, the same consisting of the hinged boards D D, and their supporting frame, and the grooved slides F F and standards E E, and their operative mechanism, as described.

Second, the above-described arrangement of the hinged boards, their supporting frame, and the grooved slides F F and standards, and their operating mechanism.

Third, the combination of the sliders G G with the grooved standards E E, and slides F F, when combined with the hinged boards D D, and the mechanism for operating the slides F F, as specified.

No. 48,160.—ELIJAH H. DANFORTH, Jamestown, N. Y.—*Mode for Making Corundum Wheels.*—June 13, 1865.—This invention consists of a cylindrical mould, in which the plastic material of which the wheel is formed is placed; pressure is applied to the piston above, by means of a thumb nut and screw, connecting it with the bottom, and passing through the centre of both.

Claim.—The combination of the base A, on the curb B, &c., as set forth and described, and represented in figure 1, a perspective view.

No. 48,161.—WILLIAM H. DOANE, Cincinnati, Ohio.—*Scroll Sawing Machine.*—June 13, 1865.—This invention relates to improvements in constructing, guiding, and driving the saw stock of scroll-cutting saws; also, to improvements in supporting the driving or crank shaft, and connecting this shaft to the saw stock in such manner that a comparatively long stroke can be obtained at a low table.

Claim.—First, connecting the pitman D to the upper end of a scroll saw stock by means of the conical bearing *b* on the end of the slide *a'* and a bolt *c* passing through the stock, substantially in the manner and for the purpose described.

Second, the combined conical wrist pin and slide *a b* formed on or attached to the saw stock, substantially as described.

Third, the hollow cylindrical stock E in combination with a combined wrist pin and slide, which works in guides at the back of the stock, substantially as and for the purpose described.

Fourth, the arrangement of the back and side guides *n n'* on a plate *k* attached to the table *b*, substantially as described.

No. 48,162.—F. DOELBER, Philadelphia, Penn.—*Tobacco Pipe.*—June 13, 1865.—This invention consists in an elbow of metal, the vertical end of which forms a socket in which either the stem or the bowl may be inserted. The horizontal end of the elbow fits into a socket in the side of a metallic fluid receptacle, the top of which also forms a socket to receive the stem or bowl.

Claim.—The elbow D, provided with a socket *b*, and made to fit in the lateral socket *d* of the fluid receptacle of a smoking pipe, substantially as and for the purpose set forth.

No. 48,163.—JAMES ELDER, Carthage, Ill.—*Whiffletree.*—June 13, 1865.—This whiffletree consists of a singletree, a doubletree, and a trebletree, for the attachment of three horses abreast—one to the singletree and the other two to the doubletree. In order that a disproportionate load may not be thrown upon the single horse, he is attached to the longer arm of a lever upon which the span pull by the shorter arm.

Claim.—The combination of the adjustable lever G, lever J, and rod K, with the trebletree D, for equalizing the draught upon the horses of the team, substantially as described.

No. 48,164.—JAMES FALLOWS, Philadelphia, Penn.—*Sheet-metal Spoon.*—June 13, 1865.—This invention consists in making the handle of two pieces of thin tin, and uniting the edges and ornamenting the sides by stamping dies.

Claim.—A sheet-iron or tin-plate spoon or fork, having a hollow handle, constructed and finished substantially in the manner described, as an improved article of manufacture.

No. 48,165.—A. D. FOSTER, Jordan, N. Y.—*Pump.*—June 13, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—The combination and relative arrangement of the valves *v* and *v'*, when rigidly attached to the pivoted lever G, with the hollow piston P, having a head composed of the plates B and C, between which is arranged the disk valve D, which is constructed and operated conjointly with the other parts in the manner shown and for the purpose described.

No. 48,166.—GEORGE H. FOX, Boston, Mass.—*Steam Regulator Valve.*—June 13, 1865.—The object of this invention is to automatically regulate the induction of steam pressure at a given point of delivery to the steam generator furnace, when combined with a steam blower. Its novelty consists in the combination of the valve diaphragm and the inlet and outlet chambers.

Claim.—The combination of the valve *e*, diaphragm *i*, and inlet and outlet chambers, when arranged to operate together and with reference to each other, substantially as set forth.

No. 46,167.—GEORGE P. GANSTER, New York, N. Y.—*Concussion Fuze for Explosive Shells.*—June 13, 1865.—In this invention a chamber within the fuze-plug, of conical form

in either direction, is occupied by two cone plungers, whose bases are separated or held apart by a spring, and between which is placed the percussion priming. On the impact of the shell, in any direction, the two conical plungers are forcibly brought together, and thus ignite the percussion priming. A safety check is interposed between the plungers to prevent accidental explosion, and is removed when the fuze is to be used by a simple adjustment of a wire.

Claim.—The use of two cones D and C, operating in a double-coned chamber, substantially as shown and described.

No. 48,168.—LEWIS S. GILLILAND, Dayton, Ohio.—*Head for Barrels.*—June 13, 1865.—This invention consists in making barrel heads so that they may be lessened or enlarged in order to be placed in or out of the barrel, and consists of segments, with pawl and ratchet and other devices attached to the head for that purpose.

Claim.—First, the removable barrel head, with adjustable segments, arranged and operated so as to be lessened and enlarged in circumference, for the purpose of being placed into and out of the croze of barrels or casks without moving any of the hoops thereon, constructed as described.

Second, the arrangement and use of either the lever ratchet or the holder and thumb screws, or their equivalents, for the purpose of forcing and holding the outer edge of the head into the croze of the cask, substantially as herein set forth.

Third, as a new article of manufacture, the metallic segments G D B with the lever B′, the said article being adapted for attachment to and operation with a barrel head, in the manner and for the purpose herein explained.

No. 48,169.—WILLIS GLAZE, Rochester, Ind.—*Wagon Brake.*—June 13, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—First, the connecting of the whiffletrees Q to a bar *o* pivoted to a rod *e* which is connected with the lever J for the purpose of relieving the rear wheels of the pressure of the shoes under the pull of the team, as set forth.

Second, the arrangement of the slide K fitted in the guide plate L, lever J, and rods *e* M, and thimble N, all arranged to operate in connection with the levers E E, substantially as and for the purpose specified.

Third, the combination of the levers E E, rod I, lever J, rod *e*, slide K, rod M, and thimble N, with the bar O connected by rods P P to the whiffletrees Q Q, for the purpose set forth.

No. 48,170.—WILLIAM R. GREENLEAF, Buffalo, N. Y.—*Oil Ejectors.*—June 13, 1865.—This invention consists in placing any desired number of ejectors in one well at nearly equal distances apart, in combination with chambers or reservoirs so arranged as to divide the well into as many compartments and the column of oil into as many sections as there are ejectors used. Pipes lead from the surface and communicate with each of the ejectors, beginning with the lower one, from which the oil is ejected and forced into the next in the series, in which it is retained until acted upon by the ejector placed therein, and the process is repeated until the oil reaches the surface.

Claim.—The combination of the ejector or ejectors C, or equivalent, with one, two, three, three, or more compartments or chambers A, for the purpose and substantially as described.

No. 48,171.—G. GUNTHER, New York, N. Y.—*Flower Basket.*—June 13, 1865.—In this invention the outside body of the pot is made of ornamented metal plates; within is a metallic cup with a perforated bottom, and beneath is a detachable bottom to hold water that may drip from the cup which contains the plants. The basket is suspended by three cords joined above.

Claim.—A flower basket A with a detachable bottom, made substantially as set forth.

No. 48,172.—PHILLIP HALL, Philadelphia, Penn.—*Filter for Oils, &c.*—June 13, 1865.—This invention consists of a series of vessels placed one within the other, and having their bottoms fitted with conical tubes filled with raw cotton. These vessels are placed within another vessel surrounded by a steam jacket, by means of which heat may be applied if necessary.

Claim.—First, a filter for purifying oils, consisting of a close chamber having a perforated diaphragm top and a diaphragm bottom composed of a number of conical tubes fitted with raw cotton, substantially in the manner described.

Second, the use of raw cotton in conical tubes, substantially in the manner and for the purpose set forth.

Third, the combination of a series of two or more filters, constructed substantially in the manner described for the purposes set forth.

Fourth, the combination of one or more filters constructed substantially in the manner described, with a heating or refrigerating vessel, constructed and arranged substantially in the manner described for the purposes set forth.

No. 48,173.—H. W. HARKNESS and J. C. MACK, Bristol, Conn.—*Ice Scraper.*—June 13, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—As a new article of manufacture, an ice scraper, the bowl or body *a* having an aperture *m* in its bottom, in combination with the knife or scraper *c*, pin or screw *i*, and handle *n*, substantially as and for the purpose described.

No. 48,174.—CONRAD and FREDERICK W. HOFFMAN, Morrisania, N. Y.—*Machine for Cutting off Cigars.*—June 13, 1865.—This invention consists in the combination of an adjustable table and an upper and lower trough with an index or ratchet wheel at one side, and at the other side a hand lever with a knife attached thereto; the lower trough has a head rest at one end, against which the heads of the cigars are placed and made adjustable to suit any length of the same; attached to each side of the machine, and below the lower trough, is a projection fitting up through a slot in the same, for the purpose of facilitating the removal of the cigars.

Claim.—First, the hinged trough or channel plate C operated by the knife lever, and arranged in the manner and for the purpose described.

Second, the plate D operated by a pin *s* fast to the lever F, in combination with an inclined projection *a* fast to the frame, and arranged in the manner and for the purpose set forth.

Third, the movable head piece E, in combination with the plate D, as described.

Fourth, in combination with the plate D, the index ratchet wheel H, arranged and operated in the manner and for the purpose substantially as set forth and described.

Fifth, the combination of the marble table B, trough C, plate D, knife lever F, and index wheel H, when arranged and operating together in the manner and for the purposes substantially as set forth and described.

No. 48,175.—GEORGE W. HOLLEY, Niagara, N. Y.—*Machine for Gathering and Loading Hay, Stone, &c.*—June 13, 1865.—In this invention a rack for hay extends out at right angles to the body of a wagon; it moves vertically upon a shaft geared to another shaft at right angles to it, passing through the body of the wagon. Two tongues are used, the upper one sliding over the other, and at its rear end fastened to a rectangular frame; this frame carries two racks upon its under side that operate the toothed wheels upon the central shaft. The backward movement of the horses forces back the tongue, and through the tongue the rack frame which rotates the central shaft and elevates the hay fork or rack.

Claim.—First, operating devices for elevating hay, stone, or substances of any kind, by means of a backward or retrograde movement of the horses.

Second, the use of two tongues to one wagon, as described, to permit the same to be drawn forward as usual, and adapt the motion of the horses in backing to be transmitted to elevating devices, substantially as set forth.

Third, the slot *h* in the lower tongue H, in combination with the evener P and cord Q, the whole being employed in the manner and for the purpose stated herein.

Fourth, in a machine constructed as herein described, I claim the combination of the movable rack frame J J1 J2, the cog wheels G G, the pinion O, and the shaft F, the whole being constructed and arranged to operate in the manner and for the purpose explained.

Fifth, the lever S, in combination with the clutch T when employed, to enable the attendant to assist in elevating the hay or stone, as set forth.

Sixth, the neck yoke R employed to attach the upper tongue H′ to the horses, so as to cause said tongue to undergo the backward movement of the horses, as and for the object specified.

No. 48,176.—BENNETT HOTCHKISS, New Haven, Conn.—*Match Splint Cards.*—June 13, 1865.—This invention consists in sharpening or pointing blank matches in sheets or cards, and cutting them partially asunder, but not so much but that the cards will hold together, and as much narrower as the depth of the pointing is in the length, so that, in putting up the cards into shape for dipping and sale, the points project beyond the body of the cards.

Claim.—As a new device of manufacture, making the cards of match splints, substantially as herein described and set forth.

No. 48,177.—JAMES A. and HENRY A. HOUSE, Bridgeport, Conn.—*Chair.*—June 13, 1865.—This invention consists in attaching a stop reel to backs of chairs to make them adjustable as to inclination.

Claim.—The combination of reel R, bolt D, spring *x*, and cords T, operating together, substantially as and for the purpose specified.

No. 48,178.—DAVID G. HUSSEY, Nantucket, Mass.—*Boys' Sleds.*—June 13, 1865.—This is an extension sled, and may be enlarged as desired. To this end the top of the sled is composed of three parts, constructed of a series of parallel slats arranged so that the slats of one part slide between those of another. To one of the parts are attached levers so arranged that the part may be turned to either hand, and thus guide the sled. The brake is also supposed to be of an improved form.

Claim.—First, the constructing or forming of the sled of a plurality of parts attached respectively to the separate frame pieces *a* and *a′*, alternately arranged in one plane, as represented in the drawing, so as to constitute a level floor or bed, and in such manner that said

parts may be extended in a greater or less degree to increase the capacity of the sled as may be required.

Second, the combination of the pivoted steering frame E mounted on a pair of runners C C, and the levers F and H, constructed, arranged, and operating as described in connection with levers I, or equivalent means for actuating the lever H.

Third, the combination of the sliding foot piece L K and *k*, and elastic brake teeth *h h*, all constructed, arranged, and operating substantially as and for the purposes set forth.

No. 48,179.—DAVID G. HUSSEY, Nantucket, Mass.—*Horse Rake.*—June 13, 1865.—This invention relates to the construction of the rake head, and will be readily understood by reference to the claim and engraving.

Claim.—The curved arms *b*, provided with two or more sockets *c* and teeth *d* inserted therein, substantially as described.

No. 48,180.—JACOB B. HYZER, Janesville, Wis.—*Radiating Attachment for Stoves and Furnaces.*—June 13, 1865.—In this invention an outer case encloses in a hot-air chamber a stove and heat radiating attachment constructed with an inner radiating surface and hot-air space. External air entering the outer casing at the bottom is allowed to flow into this inner space, passing between the stove and radiator. The radiator is divided by vertical partitions extending alternately nearly to the top or bottom, so that a circuitous route for the products of combustion is made by closing a damper in the pipe passing horizontally through said space; or, by opening this, they flow through this pipe and the vertical pipe passing through the inner space. Pipes from the top of the outer casing carry off the heat as desired.

Claim.—First, the combination of the flue *g* and damper *h* with the flue *g'* and central smoke-pipe D, substantially as and for the purpose set forth.

Second, the combination of the outer and inner radiating cylinders G and O, and the radial plates *f f'* and *f''*, producing ascending and descending flues, with the inner unconfined hot-air space *c*, ventilated above and below, substantially as and for the purpose set forth.

Third, the combination of the flue L, cylinders G and O, and radial plates *f f' f''* with the flues *g'*, damper *h*, smoke-pipe D, and inner unconfined hot-air space C', when constructed and arranged substantially as and for the purpose set forth.

No. 48,181.—SAMUEL KEELER, Lancaster, Penn.—*Wood-Bending Machine.*—June 13, 1865.—The object of this invention is to bend wood for wagon felloes into shape, and it consists in a strong semicircular frame or former, to which are attached swinging levers, with friction rollers so placed that, as the levers are swung around to bend the wood, the rollers will pass over the timber, pressing it firmly in shape on the former, and when so bent are securely fastened by means of metal straps locked over the bent felloe and secured to the edges of the former.

Claim.—The arrangement and combination of the device C D E H L M and N, as herein described, and for the purposes set forth.

No. 48,182.—R. KEESE, Cardington, Ohio.—*Churn.*—June 13, 1865.—This invention consists in the arrangement of two winged beaters placed opposite to each other between two cross-arms or beaters, and provided underneath said arms with a sweep for the purpose of scattering the cream from under the beaters round in the churn.

Claim.—The rotation winged beaters L, cross-arms or beaters *h*, in combination with the sweep *f*, when arranged and operating as and for the purpose set forth.

No. 48,183.—D. J. KELLOGG, Rochester, N. Y.—*Clothes Dryer.*—June 13, 1865.—This invention consists of a bracket with holes and flanges for inserting rods for holding the clothes to be dried.

Claim.—The stop and retaining flanges *f g*, in combination with the bracket A and clothes bars B, substantially as herein specified.

No. 48,184.—WERNER KROEGER, Milwaukee, Wis.—*Stove-pipe Drum.*—June 13, 1865.—This invention relates to a heat radiator, designed more especially for stove-pipes, to arrest the heat passing through the same, and radiate it into the apartment, so that it cannot escape into the flue with the products of combustion.

Claim.—The cylinder A, provided with the two internal cylinders E E', having long and short plates *c c' d d'* attached to their exterior surfaces, and having disks F G at their ends provided with openings *a e*, all arranged substantially as shown with the dampers G K, to operate substantially as and for the purpose set forth.

No. 48,185.—HENRY A. LEE, Worcester, Mass.—*Planing Machine.*—June 13, 1865.—This invention is designed as an improvement on a machine patented by the said Lee October 13, 1863. It consists in an adjustable automatic pressure stand so arranged that the pressure is the same whether the stand is near to or further from the planing cylinder; and it also consists in an arrangement of devices for adjusting the mouth in the bed plate so that thin stuff can have mouldings cut on their lower corner while the face or sides are being worked.

Claim.—First, the combination, with the horizontal cutter cylinder, of a moulding machine, of an adjustable automatic pressure stand, whereby the pressure of the shoe upon the stuff remains the same whether the stand is removed to or from the cylinder, substantially as and for the purposes stated.

Second, the combination with the adjustable stand L, of pressure bar I, screw shaft P, and weighted levers Q, substantially as and for the purposes specified.

Third, in combination with the adjustable pressure bars K, the adjusting screws P and screw nuts *m*, operating against the rounded ends of the bar K, as and for the purpose specified.

Fourth, in combination with the stand M the slotted flanges *d* when secured to the standard T of the cutter cylinder D, to make it adjustable thereon, as and for the purposes specified.

Fifth, in combination with the cutter cylinder E, working under the bed B, the adjustable mouth-piece *p* in the bed plate, by which mouldings can be cut on the lower corners of the stuff while the sides and face are worked, as herein shown and described.

No. 48,186.—RICHARD LEE, Newark, N. J.—*Leather Dressing Machine.*—June 13, 1865.—This invention consists in a cylinder or drum provided upon its face with a number of rubbers, placed in such a position that every part of the hide shall be operated upon by them in one revolution of the drum. It further consists in a tooth, the action of which is alternating.

Claim.—The rolls or rubbers with their semicircles, tilt springs, and spring bearings constructed in the manner and for the purpose specified, the manner of alternating the action of the table, substantially as shown, and the whole machine with the various parts combined, arranged, and operated in the manner and for the purpose herein above set forth.

No. 48,187.—H. W. LIBBEY, Cleveland, Ohio.—*Incendiary Compound.*—June 13, 1865.—This invention consists of a compound made as follows, viz: Nitric acid and sulphate of baryta are placed in a vessel and well macerated, and sulphuric ether is added, after which spirits of turpentine and nitrate of potash finely powdered are added. The whole is allowed to stand for three days, and the oily substance which rises to the surface is removed and mixed with alcohol. To this is added hydro-carbon oil, and also tar free from water. Collodion may be added to make the compound more explosive. Rags are saturated with the compound and used to fill shells, &c.

Claim.—An incendiary compound composed of the ingredients herein named and compounded in the manner substantially as herein specified and set forth.

No. 48,188.—H. LIBBY, Evansville, Wis.—*Ladies' Boot.*—June 13, 1865.—In this invention the uppers are connected by a webbing with the heel piece, at or near the top of the boot; the heel leather extends on both sides so as to embrace the leg, in front of which it is fastened by strings, buckles, &c.

Claim.—A boot for ladies' and misses' use, made with a heel piece *d*, and extensions *r r*, constructed substantially in the manner herein shown and described.

No. 48,189.—JOSEPH H. LITTLEFIELD, Cambridge, Mass.—*Flour Sifter.*—June 13, 1865.—This invention consists in making the shaft of a triangular form with flexible rubbers secured in grooves in the centre of the flat sides of the shaft.

Claim.—The arrangement and combination of the case B B C C, sieve G, the two side pieces D D, and the equilateral triangular shaft A, or its equivalent, provided with the grooves *i i i*, and the elastic strips E E E, substantially as described and for the purpose set forth.

No. 48,190.—WESLEY LOUCKS, Schoharie, N. Y.—*Egg Cooker.*—June 13, 1865.—This invention consists of two plates of metal made to fold together and revolve like a gridiron, in each of which are cup-shaped depressions opposed to each other, in which the eggs are placed to be cooked; and when one side is done it can be turned over.

Claim.—The within described egg cooker as a new article of manufacture.

No. 48,191.—EDWIN LOCKWOOD and GEORGE W. PITMAN, Bordentown, N. Y.—*Car Seat.*—June 13, 1865.—This invention relates to an adjustable car-seat for sleeping cars, and consists in constructing and arranging the back and the seat in such a manner that both may be inclined to suit the occupant when desiring to sleep or to be in an inclined position, and both the seat and back rendered capable of being adjusted or reversed, to suit the direction in which the car is running.

Claim.—The seat B, provided with the adjustable rods C, arranged substantially as shown, in connection with the reversible back H, applied to the seat by means of the bars I G, substantially as and for the purpose specified.

No. 48,192.—O. MALLORY, Rochester, N. Y.—*Grape Box.*—June 13, 1865.—This invention consists in cutting the bottom bevelling from above downwards, and forming the hoop of straw-board paper, which, being moistened, shrinks closely upon the bottom, and holds it fast.

Claim.—As an improved article of manufacture, a grape box composed of an inflexible or wooden bottom B, having a bevelled edge cut under from the face, or inside of the bottom, for the purposes set forth, and being arranged and combined with the straw-board hoop or side A, in the manner shown and described.

No. 48,193.—HERVY MANGER, Philadelphia, Penn.—*Photographic Camera Stand.*—June 13, 1865.—This invention consists of a spiral arrangement of adjusting cross-bars to give a proper inclination to the camera; and when adjusted to become a fixture on the floor on the raising of the casters by means of a cam bar.

Claim.—In combination with the rigid and main supporting frame of a camera stand the hinged beams C C H, endless screw shafts G, and table C, substantially as and for the purposes specified.

Also, in combination with the main supporting frame of a camera stand the hinged beams B C H, endless screw shafts G, L, and table E, substantially as and for the purposes specified.

Also, in combination with the adjustable camera stand herein described the adjustable spring-supporting rods P, whether the same are used with or without caster rolls, substantially as and for the purposes specified.

No. 48,194.—GEORGE MAYLAND, Brooklyn, N. Y.—*Fruit Knife and Nut Pick.*—June 13, 1865.—This invention consists in constructing the spring so as to admit of shutting the knife blade into the handle upon one side, and the nut pick upon the other; a fruit knife blade and nut pick requiring to be so much thicker than the blades of an ordinary knife that they will not shut past each other so readily.

Claim.—As an improved article of manufacture, a combined fruit knife and nut pick, composed of a fruit blade C, and nut pick D, placed in one and the same handle A, at opposite ends thereof, and arranged relatively with a spring B, of such form as to act upon both the blade and back, and admit of the same opening and closing at opposite edges of the handle, substantially as described.

No. 48,195.—CHARLES E. MILLER, Cincinnati, Ohio.—*Broom Head.*—June 13, 1865.—This invention consists of an arrangement of open-work metallic clamps, joined by a detachable hinge at that part most remote from the handle.

Claim.—First, connecting the jaws of a metallic broom head by a detachable or caper hinge or articulation, at the point of the head, or that pulp of the same further from the handle.

Second, in combination with the above the sockets C C, and pintles *c c*, when formed upon the ends of arms projecting downward from the lower bars D D′, as and for the purposes specified.

No. 48,196.—CHAS. T. MILLER, Providence, R. I.—*Ash Sifter.*—June 13, 1865.—This invention consists of a close wooden box, in the upper part of which near the end is a hopper, with a hinged cover, beneath which is suspended a vibrating sieve, moved by a lever on the outside, and inclined towards the end furthest from the hopper; which end of the box is made to open like a door, and has on its inside a shelf so constructed as to deflect the cinders falling from the sieve, and keep them from piling up around the door; there is an inclined plane beneath the sieve which directs the sifted ashes towards a door in the lower part of the box, in the same end as the hopper; the door is closed by a slide.

Claim.—The combination and arrangement in a coal and ash sifter of the hopper B, vibrating sieve G, deflecting board *g*, inclined ash board *c*, arranged reversely to the sieve *g*, and doors D E and F, substantially as and for the purposes described.

No. 48,197.—JACOB MORRIS, Auburn, Mo.—*Hand Corn Planter.*—June 13, 1865.—This invention consists in placing a wooden pin across underneath the seed-dropping device, for the purpose of scattering the seed.

Claim.—The employment or use of the rod or bar H, when used in connection with the two side plates A A′, pivoted together and provided with plates I I, and also provided respectively with the hopper E, and the slide F, substantially as and for the purpose herein set forth.

No. 48,198.—JAMES H. M. MORRIS, Reading, Ill.—*Liniment.*—June 13, 1865.—This invention consists of a composition of spirits of turpentine, Seneca oil, sweet oil, tincture of arnica, oil of hemlock, juniper, amber, and laudanum, spirits of ammonia, and gum camphor.

Claim.—The liniment composed of the ingredients compounded in the manner and in the proportions herein described.

No. 48,199.—FRANCIS S. MUNROE, Jr., Grantville, Mass., and THOMAS MASON, Boston, Mass.—*Machine for Printing Paper Hangings.*—June 13, 1865.—This machine consists of a cylinder of elastic surface, having the design to be printed configurated upon it. A certain

number of color rolls arranged upon an endless band are made to pass over the surface of this cylinder, upon which they lay the colors evenly. On the opposite side of the cylinder is an elastic pressure roller, between which and the cylinder passes the paper and thus receives the impressions.

Claim.—The endless series of ink rolls *k*, and the tablet *r*, when combined and arranged to operate together, and in connection with the inking apparatus and the elastic printing cylinder *c*, substantially as set forth.

No. 48,200.—Aaron B. Nott, Fairhaven, Mass.—*Detachable Oven.*—June 13, 1865.—In this invention the oven is provided with ledges on its interior surface to support shelves, and is so surrounded by an arrangement of horizontal and vertical partitions as to have on its four sides double-flue spaces through which, by closing the dampers at the top and bottom, the draught passes entirely around the oven. When the dampers are open the draught flows through the exterior flue; vessels for cooking may be placed in the apertures in the top.

Claim.—The combination and arrangement of the oven O, the two flues A G, the induction and eduction pipes F F′, the opening *e*, and the dampers D *d d*, the whole being substantially as specified.

Also, in connection with the oven and its flues, arranged as described, the four ledges *a a a a*, arranged and applied to the four sides of the interior of the oven.

Also, in connection with the oven and its flues arranged as described, the boiler openings *f f f f*, applied to one end and one side of the outer flue case, for the purpose specified.

No. 48,201.—B. F. Parkinson, Washington, Penn.—*Magazine Fire-arm.*—June 13, 1865.—In this invention, the magazine consists of a looped tube made removable, and is placed within the side of the stock, the cartridges being fed forward by a follower connected to a cord passing over a pulley, and moved upon a spring barrel. A revolving cylinder carries the cartridge into line with the barrel, and a spring pin is so arranged as to throw the revolving dog or pawl of the hammer out of engagement when desired.

Claim.—First, the lowed, removable magazine B, constructed and operated substantially as described for the purpose set forth.

Second, the spring pin *a* for releasing the pawl, enabling the arm to be cocked without rotating the cylinder, or rotating the cylinder without the intervention of the hammer or trigger.

No. 48,202.—J. Peabody, Dixmont Centre, Me.—*Pump.*—June 13, 1865.—In this invention, a vertical pump cylinder has a lateral chamber extending its whole length, and opening upon and into the pump stock. Near the bottom a valve opens into this chamber as the piston descends; as the piston descends, it lifts the top from the barrel and permits the flow into the upper part of the side chamber, and thence upward. The supply is through two ports, with valves opposite the side chamber, the upper ones opening as the piston descends, and the lower ones as it ascends.

Claim.—The arrangement of the valve *o*, the valve chamber D, and its discharge passage *b*, with the piston B, and its rod C, and the pump barrel, its other valves and valve passages, and the eduction passage L, the whole being substantially as specified.

No. 48,203.—Henry Petrie, Chicaco, Ill.—*Hydrometer.*—June 13, 1865.—This invention will be readily understood by reference to the claim and engraving.

Claim.—First, the adjustable bottom 3 and 4, when used for the purposes specified.

Second, a hydrometer with the table B attached to the case thereof, substantially as set forth.

No. 48,204.—Louis Planer, New York, N. Y.—*Feed-wheels for Sewing Machines.*—June 13, 1865.—With the feed-wheel of a sewing machine is combined a mechanism for causing the wheel to progress regularly, and for readily adjusting the stitches. This is effected by means of a dog, lever, and arm, provided with an adjusting mechanism.

Claim.—The combination of the shaft 12, with its arm 13, journal piece 7, arms 6 and 14, screw 9, link 5, arranged and operating together to lift and adjust the presser foot of a sewing machine, substantially as described and for the purposes set forth.

No. 48,205.—Louis Planer, New York, N. Y.—*Feed-wheel for Sewing Machines.*—June 13, 1865.—This invention consists of a link which, without any other fastening, holds together the dog and the feed lever; by shifting either end of this lever from one to the other of the notches, the firmness of the bite upon the wheel can be varied; and by means of a screw and spring the dog may be adjusted to compensate for any wear. A slide and scale admit of graduating the length of stitch to any measurement desired.

Claim.—First, the combination with the feed-wheel of the slotted link P, arranged to grasp the feed-lever and dog, and to hold the dog in proper position upon the flange of the wheel without other fastening, substantially as described and specified.

Second, in combination with a feed-wheel L, lever M, with its arm N, slotted link P, and dog *o*, making the apparatus adjustable, substantially as described and specified.

Third, in combination with a feeding mechanism, constructed substantially as described,

the rule or scale upon the arm G of the rocket shaft, whereby the machine can be readily set to sew any desired number of stitches to the inch, substantially as described and specified.

No. 48,206.—Louis Planer, New York, N. Y.—*Feed-wheel for Sewing Machines.*—June 13, 1865.—In this invention the dog is retained in place by the flanges on the wheel and an ear of the feed-lever; this lever is operated upon at its longer arm by a rocking cam, its shorter arm bearing upon, and so actuating the dog. A sliding spring socket on the lever is adjustable by nuts and screws, to vary the extent of motion received from the cam.

Claim.—In combination with feed-wheels of a sewing machine, the dog *c*, lever *a*, and arm *b*, provided with an adjustable mechanism for regulating the feed, substantially as described and specified.

No. 48,207.—John Raddin, Lynn, Mass.—*Carriage Wheel.*—June 13, 1865.—This invention consists in rendering a wheel elastic, by applying to the end of the spokes a spring or packing of rubber, or other elastic substance, enclosed in a suitable box or socket.

Claim.—First, thimble O in combination with the screw N and elastic packing M, applied to the spokes and felloe of a carriage wheel, substantially as and for the purpose specified.

Second, the metallic thimble P applied to the felloe end of a wooden spoke, in combination with the screw J, packing M, thimble O, and fixed screw N, substantially as shown in figure 3, and for the purpose described.

Third, the fixed screw J in a wooden hub, operating in combination with an internal screw cut in the end of a spoke, substantially as and for the purpose described.

Fourth, the socket W, provided with a clasp entirely surrounding the felloe, when used in combination with a spoke rendered adjustable by means of a screw, and the elastic packing M, substantially as and for the purpose described.

Sixth, the combination of a hollow metallic spoke with a thimble O, screw N, and elastic packing M, substantially as and for the purpose described.

No. 48,208.—George E. Randall, Yaphank, N. Y.—*Holding and Filling Bags.*—June 13, 1865; antedated June 6, 1865.—The object of this invention is to simplify the operation of holding and filling bags with grain, and consists of a device with which one person can perform the usual work of two. The invention will be understood by reference to the claim and engraving.

Claim.—First, the combination of the two shafts C C′, fitted with pointed pins *c c*, and furnished with arms *j* and *c″*, the notched lever D, and spring *i*, substantially as herein described, for the purpose of holding and extending open the mouth of the bag.

Second, the lever F, bar E, platform G, and measure H, in combination with each other, and with the devices for holding and extending open the mouth of the bag, substantially as herein set forth.

No. 48,209.—H. D. Richardson, Florence, Mass.—*Lock.*—June 13, 1865.—In this invention the case of the lock is cylindrical, as is also the catch, and they are intended to be fitted into a bored hole. The bolt is composed of two springs lying parallel with each other in a horizontal plane, and having upon their outside edges inclined planes, and upon the ends, hooks to grasp the catch when locked. A slotted slide works over these springs, having lugs corresponding to said inclined planes; one side of the slot in this slide has a rack into which a pinion works, which is formed on the end of the key. The slide when moved back or forward releases the bolt from the catch, and also moves it in either direction.

Claim.—A lock, when constructed and arranged substantially in the manner described.

No. 48,210.—John L. Ripley, Fremouth, Ohio.—*Extension Ladder.*—June 13, 1865.—This invention consists in a combination of a series of ladders arranged in such a manner that they may be adjusted together and extended with the greatest facility, so as to form a long ladder, to be used against buildings, &c., and be also capable of being adjusted together so as to form an extensive step ladder, when the latter is required.

Claim.—The combination of the rollers *d* and *g*, plates *e* and *c*, hooks *f*, eyes *i*, pin *h*, with the ladders A B and C, when constructed and arranged as and for the purposes specified, constituting a combined step and extension ladder.

No. 48,211.—Herman Saloshinsky, New York, N. Y.—*Spring Balance.*—June 13, 1865.—The platform upon which the articles to be weighed are placed, is supported on the upper end of a vertical rod which passes down through the top of a box, and ends in a cross-bar passing horizontally from side to side of the box, but not attached to the sides of the box. This cross-bar is connected to the top of the box by means of spiral springs, so that whatever is placed upon the platform is really supported by these spiral springs. On one side of the vertical rod connecting the platform with the cross-bar is a rack in which works a small pinion. To this pinion is attached an index finger, which registers upon a dial the movements of the virtical rod caused by the weight of the article upon the platform.

Claim.—The combination of platform rod D, cross-bar B, springs S and S, rack *m*, pinion *n*, and dial handle *p*, when arranged and operating together in the manner and for the purpose substantially as set forth and described.

No. 48,212.—Gelston Sanford, New York, N. Y.—*Horse-power.*—June 13, 1865.—The frame and bearings of this horse-power, are so constructed that the bearings and position of the horizontal shaft may be changed so as to communicate power to machinery occupying different relative positions, without making any change in the position of the base of the horse-power itself. The bearing of the horizontal shaft is so arranged that it can be secured either on or under the floor of the room overhead, and thus form a bearing for the upright shaft.

Claim.—First, the construction, combination, and arrangement of the quadruple bearing *e*, and bearings *a a' a2 a3*, substantially in the manner and for the purposes herein set forth and described.

Second, the centre-piece B, constructed substantially as herein described.

Third, the plate A provided with bearings *g* and *f f*, in combination with changeable wheels L and M, in the manner and for the purposes specified.

Fourth, the hanging shaft O, and universal joint P, in combination with the driving shaft of a horse-power, operating substantially as described.

No. 48,213.—Elliot Savage and Henry Stratton, West Meriden, Conn.—*Hardening and Tempering Steel.*—June 13, 1865.—This invention consists in tempering steel by plunging it, after heating to a proper temperature, into a solution of gold, silver, or copper. For fine articles a silver solution is preferred, and is prepared as follows: the chloride of silver is dissolved in a solution of cyanide of potassium, or in aqua-ammonia, until it has a strength of ten degrees Baumé. A solution of copper is prepared by dissolving chloride of copper in water until a proper specific gravity is obtained.

Claim.—The use or employment in hardening steel or metallic solutions, in the manner and for the purpose substantially as set forth.

No. 48,214.—John Schmadel, Newark, N. J., and John A. Lieb, Essex, N. J.—*Roller for Trunk.*—June 13, 1865.—This invention consists in mounting the roller on a flexible plate with lugs, which can be spread or sprung open to admit the roller, if it is desirable, in such a manner that the roller can be either used as a plain bottom roller, or can be applied to the corner by securing one end of the plate to the bottom and turning its other end up over the edge, and securing it to the side of the trunk, as may be desirable.

Claim.—The combination of the flexible plate A with punched ears *a a* and the roller B, with solid journals *b b*, the whole being constructed and employed in the manner and for the purposes herein specified.

No. 48,215.—Denning W. Sexton, East Hampton, Conn.—*Casting Coffin Handles.*—June 13, 1865.—This invention consists in an A-shaped or triangular hollow mould or drag made of metal, and capable of being filled with water to prevent heating while being used. On each inclined side of this one-half of a mould is formed, the corresponding half being formed in its respective cope, hinged to the back of the mould, and the gate to both being formed at the apex by an aperture between the mould and the copes.

Claim.—The within described device, consisting of the triangular mould or drag 3 3, with the respective hinged copes, constructed substantially as and for the purpose herein described.

No. 48,216.—Thomas Shaw, Philadelphia, Penn.—*Grinding Faucets and Valves.*—June 13, 1865.—This device consists of a vertical driving shaft, supported in a suitable frame, and carrying near its upper end two half wheels, one above the other, on opposite sides of the shafts, and the contiguous faces revolving in planes separated the distance apart of the small pinions or friction pulleys, being four in number, the shafts of which are at right angles to the main one and to each other, and in a horizontal plane midway between the planes of the two half wheels. On the outer ends of these shafts are the chucks, to which are attached the articles to be ground. The friction of the half wheels, in motion, when in contact with the friction pulleys, causes them to turn in a corresponding direction with said half wheels, and as one is below and the other above said pulleys, the motion of the latter will be alternately in opposite directions as they come in contact with one or the other of said half wheels.

Claim.—The employment of a series of mandrels rotating alternately in opposite directions, when constructed, arranged, and operated substantially as and for the purpose set forth.

No. 48,217.—Walter Shriver, New York, N. Y.—*Copying Press.*—June 13, 1865.—In this invention the screw is connected to the platen by forming an annular groove around the screw step arbor, and after coating it with a paste made of plumbago, clay, or other proper material, and drying it, it is inserted into the sand mould, and the socket and platen cast around it in one solid piece, the said coating of plumbago forming a parting between the screw and the socket.

Claim.—The method above described for forming the connection between the screw and the platen, by casting the two together, as described, for the purpose set forth.

No. 48,218.—John N. Snowdon and Henry Wilkins, Brownsville, Penn.—*Ejector for Steam Boiler Furnaces.*—June 13, 1865.—This invention has for its object to promote com-

bustion in furnaces of steam boilers and other furnaces, and it consists in an apparatus so constructed as to inject oil or water and air, by means of and along with a current of steam, into a furnace, and thereby promote the more perfect combustion of the gases and products of the fuel.

Claim.—The combination of the nozzle A, the nozzle B′, and the nozzle C′, placed concentrically one within the other, the nozzles B′ C′ being connected respectively with a steam boiler, and with an oil or other reservoir, substantially as above described.

No. 48,219.—H. M. STOKER, Watson, Ill.—*Submerged Pump.*—June 13, 1865.—In this invention a hollow piston rod carries a hollow piston, having a loose annular valve within it to alternately close the ports in the upper and lower disks, the periphery of the piston being flexible. The pump cylinder has valves at the top and bottom, and, being submerged, is lifted up and down by a pitman, while the piston and rod are stationary.

Claim.—First, in double-acting submerged pumps, the combination of the movable cylinder C, having inlet valves in both its heads D D′, with the hollow piston rod and hollow piston, the inlet passages of said cylinder being governed by the same annular valve, substantially as described.

Second, making the hollow piston H with solid heads, perforated as shown, and with elastic sides, substantially as above described.

No. 48,220.—H. M. STOKER, Watson, Ill.—*Submerged Pump.*—June 13, 1865.—In this invention two pumping cylinders and a central discharge cylinder are formed together of potters'-ware, having a valve-chest of metal united to them at the bottom, the tops of the pumping cylinders being open. The two pistons may be operated in any desired manner.

Claim.—In double-acting submerged pumps, with uncovered piston chambers, making the body or shell of the cylinder of potters'-ware, moulded in one piece, combined with a valve chamber B of metal, constructed and arranged substantially as described.

No. 48,221.—JAMES GAMAGE TARR and AUGUSTUS HENRY WENSON, Gloucester, Mass.—*Paint for Ships' Bottoms.*—June 13, 1865.—This invention consists of a composition made by reducing an alloy of zinc, tin, iron, and quicksilver to powder, and adding to the mass twenty per cent. of white arsenic. This is mixed with a composition of forty gallons of wood tar, thirty gallons of coal naphtha, and three-fourths of a pound of oxide of iron.

Claim.—The composition, or a paint, in which metallic zinc forms the basis, and is alloyed or in contact with metals which dissolve less readily in sea water, substantially as set forth herein.

No. 48,222.—DANIEL K. ALBRIGHT, Philadelphia, Penn., and LEO H. DE LANGE, Burlington, N. J.—*Hat.*—June 13, 1865.—This invention consists in enlarging the body of the hat near the brim, so that an annular space may be formed within the enlargement for the purpose of ventilation.

Claim.—Enlarging a hat near the brim, so that an annular space may be formed within the enlargement, in the manner and for the purpose specified.

No. 48,223.—HOWARD TILDEN, Boston, Mass.—*Flour Sifter.*—June 13, 1865.—This invention consists in the use of rollers to roll against the screen, in combination with scrapers, to pass over the screen after the rollers. The flour or other material to be sifted having been placed in the hopper, upon the turning of a crank the flour is dropped upon the screen, and the rollers and scrapers then force it through the screen.

Claim.—As my improvement in sifters for flour, sauce, &c., the rollers, or their equivalents, for mashing the lumps, in combination with the scrapers, substantially as described.

No. 48,224.—PHILIP UMHOLTZ, Tremont, Penn.—*Coal Breaker.*—June 13, 1865.—This invention consists in providing the rollers of coal breakers with an occasional row of large teeth at proper intervals, so that the large lumps of coal, on which the ordinary teeth make no impression, may be broken.

Claim.—Making the toothed roller of the coal breaker with an occasional row of large teeth set at distant intervals, substantially as and for the purpose described.

No. 48,225.—FELIX VOGELI, Newburgh, N. Y.—*Horse Fastener.*—June 13, 1865.—This invention consists in a falling shutter, operated by a lifting and lowering apparatus, and furnished with a means for attaching animals, in the combination of sundry straps for attaching the horse in a vertical position, and of others with a roller, by means of which the animal may be suspended for treatment; finally in an apparatus for shoeing horses.

Claim.—First, the falling shutter, operated by any suitable lifting and lowering apparatus, and furnished with means for attaching animals thereto, substantially as and for the purpose described.

Second, the combination of the surcingle, the fore and aft straps, and the head straps, for attaching the animal securely in a vertical position, irrespective of the devices for prostrating the animal.

Third, the combination of the straps *b b* with the surcingle straps, or their equivalents, and the roller H, by means of which combined devices the animal may be suspended for treatment or discipline.

Fourth, the combination of the straps by which the body of the horse is secured, those pertaining to the hobbling of the feet, and the cross-bar and strap to which a foot is secured for shoeing, &c., forming in this connection a device for the compulsory acquiescence of the animal in the operation of shoeing or other treatment in which such position of the foot or limb is desirable.

No. 48,226.—J. D. WHELPLEY and JACOB J. STORER, Boston, Mass.—*Apparatus for Separating Metals from Ores.*—June 13, 1865.—This invention consists of a cylindrical case, within which is a revolving shaft provided with blades. The case is provided with a hopper and an air aperture at the top, and an air outlet and an outlet for the ore through the conductor at the bottom. The conductor communicates with a box, which is provided with an air aperture and door. This box communicates with another box by means of a pipe, the latter box being also provided with an air aperture and a door. A tube leads from this latter box to the centre of a spray wheel which is contained in a box, the bottom of which is covered with water, and the said box is provided with shelves in the upper part.

Claim.—First, the separating of metals from mixtures of earth and metal by the application of gravity in counter action to currents of air in an upright pulverizing mill, the air moving upward to carry off the finer dust of earthy matter, while the metal falls by its superior gravity, substantially as described.

Second, the tangential conductor E leading from the periphery of the mill, in combination with the pocket B, or its equivalent, substantially as and for the purpose described.

Third, the shorter pipe *l* within the larger and longer pipe *m*, when arranged in reference to the mill A and pocket C, or their equivalent, substantially as set forth and for the purpose described.

Fourth, the employment of a water tank and a draught and spray wheel, substantially as set forth and for the purpose described.

Fifth, the pipe F in combination with the pocket B, pipes *l m*, and pocket C, substantially as and for the purpose described.

Sixth, the windage post *n* in the pocket B, substantially as and for the purpose described.

Seventh, the windage post *n* in the pocket C, substantially as and for the purpose described.

Eighth, the air post *v* in combination with the mill A, tangential conductor E, pocket B, and pipe F, substantially as and for the purpose described.

Ninth, the valves *k* and *i* at the top and bottom of the mill to change the direction of the currents of air through the same, substantially as described.

Tenth, the shelves or partitions *t* arranged in the exit or chimney D, substantially as and for the purpose described.

No. 48,227.—H. H. WOLCOTT, Yonkers, N. Y.—*Cartridge Retractor for Breech-loading Fire-arms.*—June 13, 1865.—In this invention the movable breech-block of the arm, which is pivoted so as to swing downward by the depression of the trigger-guard lever, carries in it a small projecting spring pin which, engaging in a curved flange or rim of a sliding spring retractor, pulls out the same on being opened until the cartridge is entirely withdrawn, when the pin, escaping beyond the range of the rim, allows the retractor to spring back to its place. On closing the breech the spring pin slips over the engaging rim or flange of the retractor so as to be in position for repeating the withdrawal.

Claim.—The combination of the shell drawer F, tongue *g*, laterally projecting rim *i*, and pin *h*, all constructed and arranged substantially as and for the purpose set forth.

No. 48,228.—JOHN F. YATES, Mooresville, Ind.—*Wagon Lock.*—June 13, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—The combination of the tongue K, the tongue bolt *k*, the stop bolt *x*, the front rod N, the lever M, king bolt *h*, brace O, rear rod P, the rod bars *g* and H, with their connecting pulleys *a a* and slides R R, the hounds D D, the drop lock *i*, with the snake iron *h*, all arranged and operating substantially as described and for the purpose set forth.

No. 48,229.—E. M. WRIGHT, Wilmington, Ohio.—*Corn-planter.*—June 13, 1865.—In this machine the seed-slide is worked by hand with a curved grooved lever and cord. The roller is divided into partitions to contain sand for weighting it, and a straight bar is placed in front to guide in making the rows straight.

Claim.—The combination and arrangement of the spiral seed box D, reversible seed wheel G, conducting tube *h*, and pointed seed scatterer, substantially as and for the purposes herein specified.

Also, the double-curved lever I in combination with the connecting cords, or their equivalents, working around the peripheries of the curved arms thereof, substantially as and for the purpose specified.

Also, the guide rod H, arranged so as to be properly adjustable to the eyes of the attendant, substantially as and for the purpose herein set forth.

Also, the construction of the graduated roller M, substantially as and for the purpose herein specified.

No. 48,230.—WALTER YOUMONS, Lansingburg, N. Y.—*Mode of Lubricating Car Wheels.*—June 13, 1865.—This invention consists in having the journal box, which is fitted centrally in a car wheel, encompassed by chambers or recesses, in which cotton waste or other proper absorbent material, saturated with oil or other lubricating substance, is placed in contact with the journal by means of slots or openings in the box; also, in an oil receptacle applied to the wheel, and arranged in such a manner as to keep the cotton waste properly lubricated, while at the same time dust is excluded from the oil receptacle and journal.

Claim.—The employment or use, in connection with a box D of a car wheel, of a series of holes or openings *b* in the hub C encompassing the box D, and the latter provided with slots or openings C, the holes or openings *b* being filled with cotton waste saturated with oil or other proper lubricating material, and all arranged substantially as and for the purpose herein set forth.

Also, in connection with the parts aforesaid, the oil receptacle I, applied to the outer end of the hub, substantially as and for the purpose herein specified.

No. 48,231.—D. M. YOUNKMAN, Fremont, Ohio.—*Drum Stove.*—June 13, 1865.—This invention consists of two cylindrical heating chambers joined together by several vertical tubes arranged in a circle. From the centre of the top of the lower chamber rises an elbow-shaped induction tube. The top of the upper chamber is made dome-shaped, from the apex of which rises the eduction pipe.

Claim.—The drum stove herein set forth as a new article of manufacture.

No. 48,232.—FREDERICK C. BOLENDER, Lima, Ohio, assignor to himself and WM. F. DOGGETT, Indianapolis, Ind.—*Broom Head.*—June 13, 1865.—This invention consists of a head or clamp for securing the broom corn, in which a screw with a nut and arms are arranged as a binder. A piece of sheet-metal of a funnel-form covers the broom, and is also secured to the handle by the screw.

Claim.—The arrangement of the screw stem A B C, binder E F G, sheath H I, and ferrule J, or their equivalents, to form a metallic broom head, substantially as set forth.

No. 48,233.—S. K. AYRES, assignor to himself and B. A. WILDER, Delton, Wis.—*Grain Separator.*—June 13, 1865.—This invention consists in a combination of devices for giving motion to the shoe, the peculiarities of which are explained by the claim.

Claim.—First, the combination of the oval cam D, spring F, rod E, shaft H, arms I I′, and rods J L, for the purpose of operating the screens or giving a shake motion to the same, as set forth.

Second, the hanging or suspending of the shoe N on the adjustable bar A by means of a hook arm P and vibrating or reciprocating bar K, as set forth.

No. 48,234.—A. G. DEXTER, San Francisco, Cal., assignor to himself and THOS. MACKELL, Palmyra, N. Y.—*Door-bell or Gong.*—June 13, 1865.—This invention consists of a bell of a gong-form placed on the inside of a door, and operated by a lever passing through to the outside of the door, and sounded by means of levers, springs, and a hammer.

Claim.—A gong for a door, the hammer of which is operated through the medium of a plate or handle at the outer side of the door, so arranged or connected with levers and the hammer shaft that the latter will be actuated and the gong sounded by pressing said plate or handle in a direction toward the door, substantially as herein set forth.

Also, the arrangement of the hammer shaft J, bent lever F, with yielding plate M attached, lever B, and plate or handle D, or its equivalent, with the springs H L, and gong I, substantially as and for the purpose set forth.

No. 48,235.—CYPRIEN FAURE, assignor to himself and HENRY J. YATES, New York, N. Y.—*Machine for Brushing Hats.*—June 13, 1865.—In this invention, upon an oblong table are two rows of circular blocks on which the hat bodies are to be brushed, a metal band around each block being adapted to rise and retain water when desired. A rod passing from end to end above the table has a horizontal reciprocating movement, which is varied laterally by a central descending pin, traversing an eccentric slot in the centre of the table. This rod has transverse arms, from the extremities of which descend brushes which traverse the several circular blocks described. A flexible tube descends from a tank through the body of each brush.

Claim.—First, the brushes F and reciprocating rod C, constructed and arranged substantially as herein described.

Second, the combination of a guide groove G and pin X, or their equivalents, with the reciprocating rod C and brushes E, substantially as and for the purpose set forth.

Third, the application of the joint F in combination with the rod C, brushes F, and blocks Z, substantially as and for the purpose described.

Fourth, the adjustable rings D in combination with the felting block Z, constructed and operating substantially as and for the purpose specified.

No. 48,236.—CHARLES B. HATFIELD, assignor to EUGENE H. RICHARDS, Boston, Mass.—*Buckle.*—June 13, 1865.—This invention consists in forming the device in two separate parts, one of which is attached to the strap; it being a square frame, with lips on its under side, which enables it to slide along on the strap, and secures it to the tongue; this tongue constitutes the other part, which is attached to the article itself, and has a flange on its side, gradually increasing in depth towards its end, over which the lips of the other part slide, and secure the two parts of the article together.

Claim.—A buckle for fastening shoes and other articles, constructed and applied substantially in the manner herein shown and described.

No. 48,237.—JOSEPH LOFVENDAHL, assignor to himself and JOHN BLOOMGRIST, Boston, Mass.—*Nutmeg Grater.*—June 13, 1865.—This invention consists in arranging a box with a hopper, having expanded sides adjusted by springs. Under the hopper is a revolving grater. The material to be grated is pressed into and through the hopper by a plunger, having a spiral spring around its stem for throwing it upward after it has been depressed.

Claim.—First, the hopper *a a*, in combination with the springs C or their equivalents, constructed substantially as herein shown and described.

Second, the plunger *b* in combination with the cover D and hopper *a a*, arranged substantially in the manner and for the purposes herein specified.

No. 48,238.—GORDON MCKAY, Boston Mass., assignor to JAMES PURINTON, Jr., Lynn, Mass.—*Channelled Sole*—June 13, 1865.—This invention consists in making one or more channels in the sole of a boot or shoe by indentations, and a slight displacement of the material, the same being produced by a form or forms; the reverse or counterpart of the channel being forced into the sole by a blow or heavy pressure.

Claim.—A channel sole, in which the channel is formed by displacement of the material by pressure, substantially as set forth.

No. 48,239.—GEORGE W. RAY, assignor to RAY & TAYLOR, Springfield, Mass.—*Waterproof Collar and Cuff.*—June 13, 1865.—In this invention an ounce of gun cotton is dissolved in a mixture of one-half pound of sulphuric ether and one-half pound of alcohol. The solution is then poured on a glass plate and allowed to dry; a solution of gelatine in water is then poured over the plate, and the paper, thoroughly moistened, is then laid on the plate, and when dry it is removed. The paper retains the film of enamel, and is then ready to be manufactured into collars.

Claim.—A paper collar or cuff when enamelled with the composition and by the process herein described.

No. 48,240.—THOMAS SCOTT, assignor to THOMAS SCOTT, Sr., Carrollton, Ill.—*Stove.*—June 13, 1865.—In this invention the outside casing is of sheet metal, the lower part being lined with a plate of stout sheet metal, from the upper edge of which hangs a sufficient number of stirrups to hold a cast-iron lining for the sides and end of the stove.

Claim.—First, protecting the interior of sheet-iron or other thin stoves, with removable cast-iron linings, constructed and applied within the stove substantially as described.

Second, the arch B in combination with the lining C, substantially as above described.

No. 48,241.—DWIGHT L. SMITH, assignor to the WATERBURY BUCKLE COMPANY, Waterbury, Conn.—*Buckle.*—June 13, 1865.—This invention consists in making the buckle of two pieces of sheet metal, cut or swaged into shape; one piece forming the frame, leaving two internal projections for the hinges, and two others for rests, and the other forming the tongue and hook.

Claim.—As a new article of manufacture the combination of the hinges *h h*, with the ears or rests *c c*, on which the broad end *d* of the lever is supported, when the whole is constructed, arranged, and fitted for use substantially as herein described and set forth.

No. 48,242.—ANDREW TURNBULL, assignor to P. and F. CORBIN, New Britain, Conn.—*Door-bell.*—June 13, 1865.—This invention consists of devices so operated by a lever and springs that the hammer will strike the bell, when the outward and inward movement of the handle actuates the lever.

Claim.—The combination with hammer lever *m* of a device which in being moved by the outward and inward movement of the knob or handle shall actuate the lever *m* and its hammer, and thus cause the bell to be rung during each of said movements of the knob or handle, as herein described and represented.

No. 48,243.—WILLIAM BAKER, Sheffield, England.—*Manufacture of White Lead.*—June 13, 1865.—This invention consists in the use of salts of acetic acid, from which acetic acid may be liberated by means of sulphuric or hydrochloric acid, or the acid sulphates of the alkalies, instead of the acetic acid used in the ordinary process. The acetates which are preferred for this purpose are the acetates of lime, soda, and the soluble acetates of the alkalies and alkaline earths.

Claim.—The substitution for acetic acid, as now used in the Dutch method for the manufacture of white lead, of salts of acetic acid from which the acetic acid may be produced or liberated by the employment of either sulphuric acid or hydrochloric acid, or mixtures thereof, or by the employment of the acid sulphates of the alkalies.

No. 48,244.—FREDERICK E. HOFFMAN, Berlin, Prussia.—*Circular Brick-kiln.*—June 13, 1865.—This invention consists in the employment of a continuous arch divided into a number of sections, each provided with an opening to fill and empty it, and with apertures for introducing the fuel, in combination with a movable partition, with radiating flues and a smoke-stack; further, in the continuous smoke chamber, in combination with the flues, dampers, smoke stack, and sectional arch.

Claim.—The employment or use of a continuous arch, divided into a number of sections, each provided with an opening to fill and empty it, and with apertures for introducing the fuel, in combination with a movable partition, with radiating flues and smoke-stack, constructed and operating substantially as and for the purpose specified.

Also, the continuous smoke chamber, in combination with the flues, dampers, smoke-stack and sectional arch, constructed and operating substantially as and for the purpose specified.

No. 48,245.—GIDEON HUNTINGTON, Norwichville, Canada West.—*Machine for Upsetting Wagon Tires.*—June 13, 1865; antedated June 7, 1865.—This invention consists of a platform upon which are two heads, one being permanent, the other movable. These heads are each provided with two loops or bevelled mortises on each side, sufficiently far apart to allow the tire to be laid between them. Into these are fitted keys, the upper edges of which being rounded, turn in the upper part of the loop, while the lower edges, in contact with the tire, and standing inward, have the full width of the loop at the bottom in which to play as cams, when the two heads are forced together.

Claim.—First, the self-acting keys or wedges acting in the loops, or bevelled mortises, as above described.

Second, the combination of the keys and mortises with the various parts of this machine, and for the purposes herein set forth.

No. 48,246.—ANTOINE PERRIN, Paris, France.—*Knapsack.*—June 13, 1865.—This invention consists of a new article of dress, which may be used in combination with a bag. It is intended to be worn as a protection against the weather, and to sleep or sit upon. The absence of sleeves gives a perfect freedom to the arms, and admits of the dress being readily put on and taken off.

Claim.—First, the peculiar combination of a garment and bag, in the manner and for the purposes hereinbefore described.

Second, the peculiar construction of garment, combined or not with a sack or bag, as and for the purposes hereinbefore described.

No. 48,247.—JOHANN ZEH, Vienna, Austria.—*Grate for Steam Boiler Furnace.*—June 13, 1865.—This invention consists in the combination with transverse bars of supporting and connecting rods, with operating devices, consisting of cranks, &c., by means of which an oscillating movement is communicated to the bars, independently of the supporting rods, or in a modified form the whole grate may be oscillated bodily. The supply of coal from the hopper over the mouth of the furnace is regulated by a slide.

Claim.—First, the combination with the transverse grate bars *r*, of the rods *m* and *o*, and their operating devices, for the purpose of imparting to the grate bars an oscillating movement independent of their supporting rods.

Second, the combination of the coal hopper *a*, inclined furnace grate *b*, cinder conduit *c*, and ash-pit, constructed and operated as herein described.

Third, the combination with the transverse grate bars *r*, of the rods *m* and their operating devices, for the purpose of imparting to the entire grate, bodily, a backward and forward motion, as herein specified.

No. 48,248.—JOHN J. SIBLEY, New York, N. Y., assignor to BRUEN MANUFACTURING COMPANY, New York, N. Y.—*Sewing Machine.*—June 13, 1865.—This invention will be readily understood by reference to the claim and engraving.

Claim.—First, the attachment described, adjustable to a Wheeler & Wilson sewing machine, to make a stitch of three or more threads, substantially in the manner set forth.

Second, the combination of the attachment described, with the needle, rotating hook, bobbin, and other operative parts of a Wheeler & Wilson sewing machine, except the ring slide.

Third, the ring slide *j*, constructed and operating substantially as described.

Fourth, the combination of the needle *l*, bobbin *k*, thread carrier *d*, and ring slide *j*, constructed and operating together, substantially as described.

Fifth, the step *y*, constructed and operating substantially as set forth.

No. 48,249.—ETHAN ALLEN, Worcester, Mass.—*Constructing Gun-barrels.*—June 20, 1865.—This invention consists in splitting the rod which has been rolled out to form the barrel, and so arranging it that what was inside of the rod shall become the outside of the barrel, which gives more distinct and better defined figures upon the barrel.

Claim.—Splitting a twisted rod through the centre, and bringing what was the inside of the rod on the outside of the barrel, substantially as specified and for the purpose set forth.

No. 48,250.—T. F. ALLYN, Canandaigua, N. Y.—*Car Spring.*—June 20, 1865; antedated March 28, 1865.—This invention consists in the construction of a metallic car spring, with square or rectangular plates curved diagonally and fastened together at the corners, thus forming alternate pairs, which bear upon each other at the corners and diagonally through the centres, and by means of these transverse bearings or fulcra, the spring is made to vibrate and graduate to the required pressures upon it, and by the same means the fulcra or bearing points of the plates are changed alternately by being lengthened and shortened when the spring vibrates, and it is thus, to a great extent, protected against breaking.

Claim.—The construction of a metallic car spring with square or rectangular plates B, curved diagonally, and fastened together alternately at the corners with the rivets *d*, substantially as described in my specification, and for the purpose set forth.

No. 48,251.—JOHN J. AUSTIN, New York, N. Y.—*Artificial Leg.*—June 20, 1865.—The nature of this invention will be fully understood by reference to the claim and engraving.

Claim.—First, sinking the edge of the thigh socket to fit to the os-innominatum, substantially as and for the purpose set forth.

Second, the double stops of the knee joint, produced by the stud *c*, the edges *e f* of the slot *e'*, and the end *g h* of the thigh B, and leg C, substantially as and for the purpose described.

Third, the combination of the elastic segment *k* and spring *i* with the stud *c* and with the knee joint, substantially as and for the purpose specified.

Fourth, the two stops *n o* and abutment *p*, in combination with the spring *g* in the ankle joint, constructed and operated substantially as and for the purpose set forth.

No. 48,252.—ROBERT BAILEY, Cleveland, Ohio.—*Coal Stove.*—June 20, 1865.—The fuel is consumed in the rear part of the fire box, so that as the smoke and gases ascend from the front part of the mass of fuel, and come in contact with the heated air arising from the combustion of the rear part, and are, therefore, more perfectly consumed. That part not consumed, together with the heated air, is made to pass down a flue in the rear part of the stove around the pipes which admit outside air to the fire box thus heating it, and into a chamber at the base of the stove, whence it is conducted by two pipes, one on each side the stove, to a chamber in the top. Heat is thus radiated from a considerable amount of surface.

Claim.—First, so constructing the fire box that the fuel is consumed just in the rear of the same, when said chamber is arranged in relation to the ash-pit F', air chamber F, and damper L' and H', substantially as set forth.

Second, arranging the fire box E, in front of the stove, in combination with the hot-air chamber F, the draught pipe J, and diving flue *a*, as and for the purpose set forth.

No. 48,253.—JOHN BAUMEISTER, Detroit, Mich.—*Stove-pipe Water Heater.*—June 20, 1865.—This invention consists of a sheet metal water boiler, with movable lids, and a faucet for drawing off the water. A stove-pipe drum is made to embrace the boiler and support it in place, and impart heat by which the water is boiled.

Claim.—A stove-pipe water heater, above set forth, constructed substantially as and for the purpose above described.

No. 48,254.—HENRY W. BLEYER, Buffalo, N. Y.—*Regulator for the Wicks of Lanterns.*—June 20, 1865 —This invention consists in a rod, with an oblong slot fitted loosely on a pin with longitudinal play, in combination with a toothed wheel and shaft, so arranged in the bottom of the lantern lamp as conveniently to regulate the wick.

Claim.—The rod E, provided with an oblong slot *c*, and fitted on a pin *a*, or arranged in any suitable way so as to have a requisite degree of longitudinal play or adjustment, in combination with the toothed wheel D on shaft C, all arranged substantially as and for the purpose specified.

No. 48,255.—ERNST BREDT, New York, N. Y.—*Means for Manufacturing Baskets.*—June 20, 1865.—This invention consists in forming baskets by pressure between heated dies, from material that has been previously woven or interlaced in a flat form, thereby giving the basket form and shape very expeditiously.

Claim.—A basket formed by pressure between heated dies, of a sheet of material suitably prepared with sizing, stiffening, or moisture, substantially as specified.

No. 48,256.—CHARLES S. BROWN, New York, N. Y.—*Apparatus for Testing Milk.*—June 20, 1865.—This invention consists of a standard resting on a base, and having a top with apertures to hold the test tubes, which rest in basins in the base. The standard is provided with a graduated scale; and a movable scale is arranged to slide in a slot in the top and base.

Claim.—In combination with the test tubes, a permanent or movable scale to measure and compare the depth of cream or other matter in each tube with that in the other tubes, substantially as described.

No. 48,257.—Clarence E. Brown, Florence, Mass.—*Calipers.*—June 20, 1867.—This invention consists in making a self-adjusting, self-registering caliper; the points of which project towards each other from the ends of its legs, and the line of their projection is in the arc of a circle drawn from the centre of the calipers, so that the wear of the points does not shorten the calipers. A scale for indicating the measurement is attached to the body of the instrument, and is made movable therein, so as to enable it to be adjusted to a new position as the points of the legs wear away.

Claim.—First, attaching a movable scale to a calipers, substantially as and for the purpose above described.

Second, also constructing a registering calipers, so as to be self-adjusting, by means of its index and a pin upon the movable scale, substantially as above described.

No. 48,258.—Andrew Buchanan, Brooklyn, N. Y.—*Device for Boring and Excavating Coal.*—June 20, 1865; antedated June 15, 1865.—This invention consists in the use of a revolving longitudinally adjustable cutter bar, in combination with a truck to which a feed motion is imparted (by the same power which imparts motion to the cutter bar) in such a manner that, by the action of the cutters, inserted in said cutter bar, a narrow ditch of any equired length and of suitable depth can be cut in an embankment of coal, limestone, &c., in a horizontal or inclined direction, and the labor of excavating coal or other material be considerably reduced. The cutters are arranged in sections which are secured to the bar in spiral lines, so that the material to be excavated has a chance to clear itself, and the action of the cutters will not produce an injurious strain on the cutter bar, or other parts of the apparatus.

Claim.—First, the longitudinally-adjustable revolving cutter bar D, in combination with the self-feeding truck A, constructed and operating substantially as set forth.

Second, the use of sectional cutters E, in combination with the revolving cutter bar D, and truck A, constructed and operating substantially as and for the purpose described.

No. 48,259.—S. B. Burritt, New York, N. Y.—*Lathe Chuck.*—June 20, 1865.—In this chuck are two rings made with central openings to slide upon an extension of the hub, each having three inclined grooves cut in the said central openings; in these inclined openings are arranged three clamps with double inclines to correspond with these grooves, the clamps extending from one ring to the other; these rings have upon their exteriors, one a right and the other a left hand male thread, fit into the ends of a sleeve having corresponding female threads, so that by turning the sleeve one way or the other and drawing the rings to or from each other, causes the double inclined clamps to approach or recede from each other in the axial line of the chuck, so as to hold a drill of a large or small-sized shank.

Claim.—The combination of the radially movable clamps H H, having dovetail tongues of double reversed inclination on their outer edges, the rings F and G having right and left hand male screws upon their exteriors, and inclined grooves in their interiors, and the loose sleeve B, having right and left hand female screw threads in its interior, the whole arranged and applied in relation to each other and to the hub A, or body of the chuck, and operating substantially as herein specified.

No. 48,260.—Elijah R. Chamberlain, Sharonville, Ohio.—*Torpedo Ram.*—June 20, 1865; antedated June 10, 1865.—The principal feature of this invention is the foundation designed for strength and firmness, on which the ram or rod is protruded, in connection with the means by which the torpedo ram is actuated.

Claim.—First, the frame B B1 B2 *b*, constructed substantially as described, adapted to permit torpedoes to be expelled from the interior of the vessel below the water line, or to hold them at its mouth, and receive and effectually withstand the force which is applied to the torpedo on being driven into an enemy's vessel.

Second, in combination with the above, the piston G G′, operated by the chains F F′, or other suitable means, and employed to expel the torpedoes through the opening B3, or, in connection with the block H, to retain the torpedo in its operating position when the same is to be driven into an opposing body.

Third, the ropes C, and the hooks C1, in combination with the pulleys C2, and their shifting levers E E, the whole being arranged to operate substantially in the manner and for the purpose specified.

Fourth, in combination with the aforesaid B B′ B″, the gate I, operating as herein described to close the opening B‴, when said opening is not occupied by a torpedo or the expelling piston.

No. 48,261.—Frederick F. Cornell, Jr., New York, N. Y.—*Baling Press.*—June 20, 1865.—The object of this invention is to provide a means for attaching the levers of a press to the travelling sides and follower in a strong and reliable manner; also to provide a means whereby the beater may be held firmly in position to serve as a head block to the press; also to provide a means for automatically holding the travelling sides, and consequently the follower, at any desired point during the operation of pressing.

Claim.—First, connecting the levers D to the sliding sides E, and follower B, by means

of the staples or eyes *b b*, and fulcrum pin *d*, and rods *e e*, or their equivalents, substantially as herein described.

Second, the pawls H, arranged so as to hold the beater in place, to serve as a head block for the press.

Third, the racks I, and slides I′, in combination with the pawls H, as and for the purpose specified.

Fourth, the standards F F, and cross-beam G, in combination with the rod *h*, and pawls H, arranged to operate substantially as described.

Fifth, the detent rod *f′*, in combination with the projection *f*, and standards F F, substantially as and for the purpose hereinbefore described.

Sixth, the cam J, in combination with the travelling side E, and post A, substantially as and for the purpose herein specified.

No. 48,262.—JACOB B. CROWELL, Greencastle, Penn.—*Wheat Drill.*—June 20, 1865.—In this invention the middle gear wheel of the three that transmit motion from the traction wheel to the hopper is upon a wrist pin, placed at one side of the shaft. The eccentricity of this pin, and the rotation of the shaft, throws the seed apparatus out of gear.

Claim —First, the use of the above-described eccentric pin for supporting the wheel E, and throwing the same out of gear and into gear, substantially as set forth.

Second, the above-described arrangement of the three gear wheels, C E and K, with the stationary hopper, substantially as described.

Third, the combination of the gear wheel E, with the eccentric pin and arm O, when operated simultaneously with the elevation or depression of the boots, as described.

Fourth, a feed slide, when cast or made in two pieces or sections locked or coupled together and operated as one slide, substantially as described.

No. 48, 263.—ERASTUS DOUGLASS, Lowell, Mass.—*Washing Machine.*—June 20, 1865.—This invention consists of a cross-piece to be inserted in the upper part of a common wash tub. One end of this cross-piece projects out from the side of the tub, and to this projecting end is hinged a beater. The clothes to be operated upon are laid upon the cross-piece after having been soaked, and the beater is then brought down upon them as many times as required.

Claim.—The combination of the cross-piece or block B, the tube A, and the beater C, as and for the purpose herein specified.

No. 48,264.—SIMON DUNN, Allegheny city, Penn.—*Shutter Hinge.*—June 20, 1865.—This device is provided with incline planes around the pintle for dropping the shutter when swung out, and holding it open, and the improvement consists in arranging the inclined planes, upon both top and bottom of the female part of the hinge, so that it can be raised, and at once made a right or left hand hinge.

Claim.—Making on each end of the knuckle of the female part of the hinge two or more planes, corresponding to two or more around the pintle of the male part of the hinge, substantially as herein described and for the purpose set forth.

No. 48,265.—A. DUBREUIL, Baltimore, Md.—*Apparatus for Distilling Petroleum.*—June 20, 1865.—This invention consists of a retort made of light boiler-iron, with cast-iron heads. A tubular boiler is inserted in the still near the bottom, passing entirely through the heads. A fireplace is situated at one end of the boiler, and a chimney at the other; the boiler is provided with a pressure gauge and injector. In the top of the still is a man-hole and pipe through which the vapors pass to the condenser.

Claim.—The use of boiling water inside the retort or still to vaporize the material known as petroleum or rock oil, substantially in the manner and for the purposes herein before shown and described.

No. 48,266.—EDWARD DUNBAR, Buffalo, N. Y.—*Boot Heel.*—June 20, 1865.—This invention consists in constructing a metallic plate in the form of a boot or shoe heel, with an interior dovetail frame for holding an elastic heel-piece, and also having an inner flange or rim for a permanent attachment to a foundation leather heel.

Claim.—A metallic holding plate A, having an inner dovetail groove for receiving and holding the elastic tread piece B, so that the tread piece will be firmly held in the groove by its expansive force without other fastening, for the purpose and substantially as described.

No. 48,267.—JOHN S. FEE, Felicity, Ohio.—*Umbrella.*—June 20, 1865.—This invention consists in forming the web or covering of umbrellas of India-rubber.

Claim.—An umbrella whose web or covering is composed of a single piece of India-rubber, substantially as set forth.

No. 48,268.—L. D. GALE, Washington, D. C.—*Process for Preparing Coffee.*—June 20, 1865; antedated June 12, 1865.—This invention consists in extracting the soluble and vola-

tile parts of the coffee, which is done by putting the ground coffee into the boiler with water, which boiler is connected with condensers, and applying heat. The volatile parts of the coffee are condensed in the condenser; and the coffee remaining in the boiler is pressed, hot water being added, and the extract and volatile portions are then mixed with sugar and formed into solid cakes.

Claim.—Separating the aroma or volatile oil of coffee from the watery vapor, substantially in the manner and for the purpose herein set forth.

Also, the recombination of the aroma with the soluble non-volatile parts of the coffee preparatory to making the same into a solid cake, substantially in the manner and for the purpose set forth.

Also, a dense and solid cake coffee, that can be handled by itself like cakes of chocolate or sticks of candy without the aid and expense of boxes or cans, which are indispensable in all that class of preparations called coffee paste and coffee extract.

No. 48,269.—THOMAS A. GALT, Sterling, Ill.—*Seeding Machine and Cultivator.*—June 20, 1865.—The seed box has a slide carrying a slot in its bottom. This slide has another slide covering slots in it. The second slide having been adjusted by suitable device for that purpose so as to expose a greater or less portion of the slots in the main slide as may be desired to the main slide, a reciprocating motion is imparted by a device operated by one of the wheels of the carriage. Thus the seed, after passing through the slots in the main slide, is allowed to drop through the slots in the bottom of the seed box as those slots are alternately opened and shut by the motion of the main slide. The supply can in this way be regulated with nicety.

Claim.—The method of operating the slide D through the medium of the rack *i*, toothed segment *j*, and gearing *n o*, in combination with the sliding plate F, which is moved upon the slide D by means of the rack *f* and toothed segment *g*, the whole arranged as described and represented.

No. 48,270.—NELSON GATES, Middletown, Ohio.—*Head Rest for Railroad Car Seat.*—June 20, 1865.—This invention consists in the combination of an elastic cushion for the head, with a device by which the elastic rest or cushion is attached to the car seat at the back.

Claim.—First, the spring head rest constructed, arranged, and applied to use in the manner and for the purpose substantially as described.

Second, the spring head rest, constructed as described, in combination with the fastening by which it may be attached to the car, substantially as and for the purpose set forth.

No. 48,271.—EDWARD S. GILLIES, Albany, Wis.—*Cultivator.*—June 20, 1865.—This invention consists in fastening ploughs and harrows to a cultivator frame by pendent rods furnished with spiral springs to allow them to pass over obstacles. The front end of the harrows are fastened to a steel spring in front of the frame to bring them back into position.

Claim.—The attaching of harrows and ploughs, either or both, to the frame of a cultivator by means of pendent rods E provided with springs F, and connecting the heads of the harrows and ploughs to springs I attached to shafts J at the front part of frame A, in the manner substantially as and for the purpose set forth.

No. 48,272.—JOHN HABERMEHL, Wheeling, West Va.—*Chair.*—June 20, 1865.—This invention consists in hanging or attaching the seat portion of a chair to and upon its rear legs, so that, when desired, it can be tilted backwards and the front legs arranged in sockets in the under side of the seat so that they will not leave the floor when the chair is tilted.

Claim.—The arrangement of the seat of a chair, sofa, &c., herein described, the same consisting in hanging it by standards on its upper side to and upon its rear legs, in combination with so inserting the front legs within the seat that the seat can freely play up and down on the same and yet not be disengaged therefrom, substantially as and for the purposes specified.

No. 48,273.—ALBERT HALLOWELL, Lowell, Mass.—*Beer Faucet.*—June 20, 1865.—In this invention a screw inserted in the barrel has an external flange or face. It has also a superficial interior screw thread to receive the faucet. The portion projecting within the barrel is perforated to strain the outflowing liquid. A valve within is held to its seat by a spring in the socket. When the faucet is screwed in this socket it opens the valve, but the liquid cannot flow until the cock is rotated for the purpose in the usual manner.

Claim.—First, the faucet connection B as made with the two screws N and P, or their equivalents, provided with the valve and its seat, arranged substantially as specified.

Second, the said faucet connection B as made with the head *o*, combined with the screws *n* and *p*, and the valve and its seat, arranged as described.

Third, the said connection as made with the perforated guard or strainer *r*, the valve and seat and the screws, arranged as specified.

Fourth, the faucet constructed with the screw *a* and the projection *c* as arranged with the connection B, provided with a valve *a* ranged within it as specified.

Fifth, the combination of the connection B provided with a valve and made with screws *n* and *p* as described, with the faucet constructed with the screws *a* and the projection *c*, the whole being substantially as and for the purpose specified.

No. 48,274.—E. Hambujer, New York, N. Y.—*Ticket Box.*—June 20, 1865.—The tickets are made in two sections, one to be passed to the passenger and afterwards taken by the conductor, and the other to serve as a check. The tickets are enclosed in a box within which is such an arrangement of cutters that whenever a ticket is withdrawn from the box that portion which is intended to serve as a check is cut off and retained in the box. The tickets are also provided with a shoulder which serves to actuate the clapper of a bell whenever one of the tickets is withdrawn. The attention of the passenger is thereby called to the fact that the conductor has really taken the ticket from the box and not from any other place.

Claim.—The use of a box provided with suitable cutters, and with or without a bell, in combination with tickets formed substantially in the manner herein described, or in any other equivalent manner, so that by the act of withdrawing the ticket from the box a portion of said ticket is retained and serves as a check for the ticket, as herein set forth.

No. 48,275.—Edward Hamilton, Chicago, Ill.—*Snap Hook.*—June 20, 1865.—This invention consists in providing the swivel with a barrel made to receive the shank of the hook. Between the barrel and shank there is a collar sliding up and down the barrel, and held in position by a spring placed within the latter. The ring of the hook is articulated, so that one part of it, moving on a pivot, forms an arm. To open the arm the collar is lifted up, and, by pressing said arm upon the collar, the latter is lifted up to resume its former place, and thus clasps the arm to the shank.

Claim.—First, the cylinder D, when attached to the eye or swivel of a snap hook, and fitted to receive a shank collar or slide and spring.

Second, the shoulder or stop *b*, in combination with the collar E.

Third, the collar E, when applied to a snap hook, having its inner end rest on a spring and its outer end arrested by a stop.

Fourth, the combination of the collar E, spring *a*, and stop *b*, with the hook A.

Fifth, the combination of the cylinder D, collar E, spring *a*, and stop *b*, with the hook A, arm B, and eye C.

Sixth, the combination and arrangement of the collar E, spring *a*, and the incline of the end of the arm B, whereby the hook is closed by simple pressure on the arm B; each of said parts and combinations being constructed and arranged substantially as and for the purposes set forth and specified.

No. 48,276.—Thomas C. Hargrave and Kendal W. King, Boston, Mass.—*Mercurial Heater.*—June 20, 1865.—This invention consists of an endless pipe partially filled with mercury, which, by the application of heat, is caused to circulate through said tube to any desired part of the room or building, radiating heat sufficient to warm the same.

Claim.—First, the continuous or endless pipe B constructed and filled, or partially filled, with mercury, substantially as described and to the effect stated.

Second, the combination with the pipe B, containing mercury of the lamp D or other heating appliance, substantially as and to the effect set forth.

No. 48,277.—George Hart, Atwater, Ohio.—*Churn.*—June 20, 1865.—This invention consists in pivoting to a standard and one end of the guide bar a lever; said bar having holes made through it at each end, through which straps pass around a pulley on the dasher shaft, which is put in motion by the lever.

Claim.—The guide H, straps *m m'* and lever L, in combination with the pulley F' and beaters P, when arranged and operating as and for the purpose set forth.

No. 48,278.—Edward F. Holloway, Knightstown, Ind.—*Churn.*—June 20, 1865.—This invention consists in arranging two disks in the bottom of a suitable vessel and operating them in such a manner as to effectually agitate the milk or cream, and to cause air to commingle with it so as to speedily separate the butter globules from the milk.

Claim.—The disks B and C, when constructed and arranged as shown, at the bottom of vessel A, and operating substantially in the manner described.

No. 48,279.—W. Upton Hoover, Macomb, Ill.—*Band Cutter for Threshing Machine.*—June 20, 1865.—In this invention a spout with a reversible platform can be fitted on at right angles to the threshing machine upon either side. The circular cutter in the centre of this feeding spout is rotated by a pulley and cord running over another pulley upon the end of a shaft operated from the threshing cylinder.

Claim.—First, the combination of the rotary cutter B and spout C, constructed and operating as and for the purpose set forth.

Second, the reversible platform E and hinge board D, in combination with spout C, arranged to operate as and for the purpose herein described.

Third, the combination and arrangement of shaft *b* provided with the wheels *d*, pulleys *f*, and wheels *c*, with the transverse shafts are provided with the wheels *d* and pulleys *h*, for the purpose of driving the cutter B, as set forth.

No. 48,280.—W. Upton Hoover, Macomb, Ill.—*Band Cutting Machine.*—June 20, 1865.—In this invention the axle running at right angles with the feed roller is bent and

carries a pitman. This pitman moves laterally a serrated cutting blade in guides parallel to and between the feed rollers. The feed rollers are adjusted by a rack.

Claim.—First, the reciprocating band cutter *a*, arranged and operating substantially as set forth.

Second, in combination with the cutter *a*, the feed rollers C and C′, constructed and operating substantially as shown and described.

Third, the vibrating shaker E, when used as shown, for the purpose of feeding the grain into the thresher.

Fourth, the combination and arrangement of shaft F provided with the crank *h*, gear wheels *l l*, cam *p*, or its equivalent, and wheels *m* and *m′*, as and for the purpose set forth.

Fifth, the adjustable bearings *d* and *d*, provided with the racks *g* and *g′*, in combination with the wheels *f*, for the purpose of adjusting the rollers C and C′ as herein described.

No. 48,281.—B. HOLTZ and WILLIAM ENOCH, Springfield, Ohio.—*Cultivator.*—June 20, 1865.—In this invention the drag bars are connected to a single point under the draught pole. A lateral as well as a vertical movement is given to the plough by two single levers, the rear one being pivoted upon the axle and the front one upon the draught. The force of the front lever is all applied to the short arm of the rear one.

Claim.—First, connecting the drag bars E E to a single point on the main frame by the draught rods G G, substantially as described.

Second, in combination with the draught rods G G, the traveller rod *a*, substantially as described.

Third, imparting a lateral motion to the rear end of the plough beams by means of the two single levers or rods O and K, arranged and operating as described.

Fourth, pivoting the lever K upon the self-adjusting pivot L in the manner shown, for the purpose of permitting said lever to be moved both vertically and laterally, and thus performing the operation of moving the ploughs without the use of more than one lever, K, and with but a single pivot for said lever.

Fifth, connecting the drag bars in front by the stretcher F, provided with pivot screws and set screws, as described.

Sixth, the combination and arrangement of rods G, the drag bars F, posts H, foot rests J, levers K and O, ring *k*, and joint L M, as shown and described.

No. 48,282.—PETER H. JACKSON, New York, N. Y.—*Windlass.*—June 20, 1865.—This invention consists in the means of connecting and disconnecting the windlass head with and from the ratchet wheel in the use of a spiral friction mechanism, and in the introduction of sockets for handspikes for the purpose of changing the speed or power of the movements of the contiguous chain wheels.

Claim.—First, the bolt *i*, actuated by the cam or eccentric 3, for connecting or disconnecting the chain wheel *k* from the wheel *f*, as specified.

Second, the strap *k*, blocks *t* and *d*, in combination with the cam *n*, substantially as specified.

Third, the wheel *f*, provided with handspike sockets 2, in combination with the chain wheel *k* and the bolt *i*, or its equivalent, for connecting or disconnecting the wheels *f* and *h*, as set forth.

Fourth, the levers *q* and pawls *r* fitted as specified, in combination with the ratchet wheel *f* and chain wheel *h*, as set forth.

No. 48,283.—C. JILLSON, Worcester, Mass.—*Wire Pointing Machine.*—June 20, 1865.—In this device the end of the wire to be turned or pointed is supported by an eye or hub suspended from a slide which plays in a groove in the lower side of a guide bar extending longitudinally with the lathe from the head to a standard at the other end. The rest is kept in contact with the side of the cutter by means of a spring attached to a slide which bears the said rest or hub. The bed-plate, upon which the standard supporting the knife or cutter slides, is hinged at one end, and is capable of being set at any proper angle in a plane vertical and longitudinal with the axis of the wire, so that when the cutter is moved it will give to the point formed by it on the wire the angle required.

Claim.—First, the combination of the cutter stand H I with the hinged platform G and table A, substantially as and for the purposes described.

Second, the elastic band or spring *u*, in combination with the sliding block Q, and supporting eye *t*, substantially as and for the purposes specified.

Third, the combination of the hinged platform G, cutter stand H I and side pattern R, substantially as and for the purposes specified.

No. 48,284.—ALGERNON K. JOHNSTON, New York, N. Y.—*Mode of Roasting, Disintegrating, and Desulphurizing Ores of Gold and Silver, &c.*—June 20, 1865.—This invention consists in heating ores containing the precious metals, such as sulphurets, arsenurets, &c., and when heated, passing through the ore a current of steam or superheated steam, the object being to effect the complete desulphurizing and disintegrating of such ores in a short time, using the same principles of operation, viz., heat and moisture, as when such ores are disintegrated by the ordinary process of weathering.

Claim.—The treatment of sulphurets, arsenurets, and phosphides of iron, copper, nickel, or lead, containing any of the precious metals, with and by steam, with or without the presence of atmospheric air, for the purpose of freeing such ores from sulphur, arsenic, and phosphorus, and preparing the precious metal for amalgamation or other subsequent treatment.

No. 48,285.—JAMES J. JOHNSTON, Allegheny City, Penn.—*Apparatus for Distilling Oil.*—June 20, 1865.—This invention consists in exhausting air from the still, condenser, and receiving vessel, so that the distilling process may be carried on under a partial vacuum, in order that the distillation may be effected with less heat than in a plenum, and thereby a better quality of oil be obtained.

Claim.—First, distilling oil or other liquids by means of a still, condenser, and receiving vessel, from which air is exhausted, so that the distilling process is carried on under a partial vacuum, substantially as herein described and set forth.

Second, the arrangement of the vessel *a*, furnace *b*, condenser *k*, vessel *l*, and receiving vessel *m*, furnished with tube *x*, scale *g*, valves 7 and 8, and rack *n*, the whole being constructed, arranged, and operating substantially in the manner herein described and for the purpoes set forth.

No. 48,286.—EDWARD H. JONES, West Albany, N. Y.—*Steam-furnace Grate.*—June 20, 1865.—In this invention an inclined grate composed of any convenient number of bars, with lozenge-shaped openings, and cast in one piece, and so arranged as to be operated in pairs or all at once, by levers. The bars are placed at right angles with the length of the grate; parallel to and between them are lozenge-shaped chambers; the air supplied to them from beneath flows through their perforated tops, which rise above the surface of the grate, and among the burning coals.

Claim.—First, a series of grates, when cast in the form herein described, and operated in sets of two or more.

Second, in combination with the action of the grate independently by means of the levers C C, and the arms F F, the use of the oxygen distributors D D, substantially as shown, for the purpose of producing more perfect combustion.

No. 48,287.—B. F. JOSLYN, Stonington, Conn.—*Revolving Fire-arm.*—June 20, 1865; antedated June 14, 1865.—This invention relates to the construction of the frame of revolvers, and the attachment of the barrel thereto, and consists in making the parallel jaws of the frame, which extend above and below the cylinder, to embrace the enlarged rear of the barrel, and to be locked thereto by dovetailed connections.

Claim.—The frame, with its two projections *a* and *a'*, and their dovetailed recesses, in combination with the enlargement *b* of the barrel and its dovetailed projections *x* and *x'*, the several parts being arranged and adapted to each other as set forth.

No. 48,288.—B. F. JOSLYN, Stonington, Conn.—*Breech-loading Fire-arm.*—June 20, 1865.—The breech-lock is pivoted beneath the barrel, and swings backward and downward through a mortise in the stock. The trigger guard lever is hinged or pivoted to the swinging breech-lock, and its head is so formed as to constitute a lock or brace against the recoil of the breech-block when in a closed position; and a spring pin holds the lever in such relation to the breech-block when open, that it allows the same to be brought home, before the bracing end of the lever enters its recess in the stock. A supplementary hammer-piece is attached to the swinging breech-block.

Claim.—First, the lever G, and the spring pin *n*, or its equivalent, in combination with the breech-piece D and its recess *q*, the whole being arranged and operating substantially as herein set forth.

Second, the supplementary hammer E, combined and arranged to move with the breech-piece D, and to operate on the cartridge substantially as described.

No. 48,289.—JOHN W. LANE, Newton, N. J.—*Wood Base-burning Stove.*—June 20, 1865.—This invention consists in the employment of a fire-chamber with one or more openings near its base extending from the bottom to, or nearly to, the top of the stove, in combination with one or more vertical flues, or hot-air chambers, in such a manner that wood or other fuel placed in said fire-chamber shall be burned from the bottom, and that portion of the fuel in the upper part of the chamber charred. The gases evolved during this process are condensed, and serve to increase the heat of the stove.

Claim.—First, the employment of the fire-box or chamber C containing the open and vertical grate F, in the rear and lower part of the partition wall or plate L and also containing the opening or space O in the front, and at or near the lower end of the wall or plate W in the manner and for the purpose substantially as set forth.

Second, the combination of the vertical grate F, with the openings or spaces O, at the bottom of the vertical partition plate V V, in the manner substantially as set forth.

Third, the damper Q, in combination with the intermediate flue or space H, and fire chamber C, in the manner and for the purpose substantially as set forth.

No. 48,290.—Edwin B. Larchar, New York, N. Y.—*Intagliotype Plate.*—June 20, 1865; antedated April 5, 1865.—The object of this invention is to have plates prepared, on which drawings may be made of an oily ink. Over the surface of such drawings a liquid solution of the sulphate of copper is spread, and hardens where there is no oleaginous ink, and remains in a pliable state, where the ink has been deposited. A brush of suitable stiffness will now remove the soft parts, while the ground remains unaffected—thus an intaglio is produced. It is now coated entirely with the hardening solution, and is in condition to be stereotyped or electrotyped, by any of the usual processes. The plates may be used for embossing or printing in the usual manner.

Claim.—First, the metallic plate with the hardened coating of oxide upon it, made substantially in the manner described, as a new article of manufacture.

Second, the use of the oleaginous ink or pigment, in drawing a design on the surface of the oxide, so as to protect the parts drawn upon from being coated by the coating solution afterward applied.

No. 48,291.—Charles H. Lavis, Philadelphia, Penn.—*Self-regulating Damper.*—June 20, 1865; antedated March 15, 1865.—This invention consists of a square drum of sheet-metal to be attached to a stove-pipe, which has in it a damper which vibrates on a rod passing through said drum, one end resting in a bearing, and the other passing entirely through said drum, and bent at any angle necessary. On the bent end of the rod a screw thread is cut, and a nut is made to screw up and down on this thread, and serve by its weight to keep the damper in any position required.

Claim.—The drum A, the damper B, the rod C, the screw D, and the balance E, constructed and operated with reference to each other, and for the purpose and in the manner as herein shown and described.

No. 48,292.—Joseph H. Leonard, Wilmington, Ohio.—*Gate Latch.*—June 20, 1865.—This invention consists in arranging two latches and two catches to a gate opening either way. One shoulder of the notch into which the latch falls on one catch is made higher on one side, and one on the other catch higher on the other side, so as to prevent the gate swinging past the catches in shutting.

Claim.—The two latches B B′, connected by a cord or chain C, and applied to the gate A, as shown in connection with the two notched plates F F′ attached to the post F, and having with respect to each other their lower upper edges *f* at opposite sides of their notches *e*, substantially as and for the purpose herein set forth.

No. 48,293.—Sebeus C. Maine, Boston, Mass.—*Coal and Ash Sifter.*—June 20, 1865.—In this invention a cylindrical rotary sieve is provided on its inner side with a number of oblique-inclined flanges, or strips of metal, which take up the substance being sifted and throw it violently against the opposite side of the sieve.

Claim.—The flanges or strips *c*, in combination with the cylinder B, operating substantially as set forth for the purpose specified.

Also, the cylinder B, provided with flanges *c*, in combination with the box A, hopper G, and receptacle E, arranged and operating substantially as set forth.

No. 48,294.—Elisha Matteson, South Brooklyn, N. Y.—*Mechanical Movement.*—June 20, 1865.—This invention consists of a circular inclined plane mounted on a pivot. To this inclined plane motion is communicated from a vertical shaft passing through its upper side in such a manner that the rolling weight employed upon the inclined plane is constantly descending. The motion thus obtained can be transmitted to machinery of various descriptions.

Claim.—First, the employment of an inclined disk D and C′, in conjunction with a rolling weight E, which is connected to a driving shaft in such a manner that a rotary motion will be communicated to this shaft by oscillating said disk, substantially as described.

Second, the application of arms *g g′* and a pitman J to the inclined disk D, substantially as described.

Third, the combination of the flanged-inclined disk D, roller E, shafts F G, and a contrivance applied to said disk for oscillating it, substantially as described.

Fourth, supporting the inclined disk D upon a gimbal-joint at its centre, and upon a base ring, or its equivalent, at or near its circumference, in combination with a rolling pendent weight E, substantially as described.

No. 48,295.—John Mayer, Philadelphia, Penn.—*Hair Brush.*—June 20, 1865.—This invention consists in making the handle of the brush tubular, and in fitting within it a cylinder of pomade, so that the latter may be readily and sufficiently protruded for use, as occasion may require, at the uncovered end of the handle, by means of a concealed rack and pinion operated by the application of the thumb to a spur-wheel slightly projecting on the side of the handle.

Claim.—A hair brush having a tubular handle, provided with any suitable pomade, and constructed so as to operate substantially in the manner and for the purpose described.

No. 48,296.—Thomas McGirr, Richmond, Ind., assignor to himself and Nicholas R. Nixon.—*Measuring Faucet.*—June 20, 1865.—This invention consists in an arrangement of devices designated in the claim, and will be understood from the engraving.

Claim.—The combination and arrangement of the float K, stem J, scale I, finger L, all substantially as shown and described.

No. 48,297.—M. McGonnigle, Allegheny City, Penn.—*Door Bolt.*—June 20, 1865.—This invention consists in the use of two cams for throwing back the bolt, to one of which a spindle and knob are attached from the outside, and to the other a spindle and knob from the inside, each of which performs its office independently of the other. The bolt is supported at the rear end by a hole made in the case, through which the end of the bolt extends, and so arranged that when it is desired to fasten the bolt shut a slide passes over the hole on the outside, where it is held by a thumb screw and preventing the bolt from sliding back.

Claim.—First, the use of two spindles and knobs, in combination with two cams and one spring bolt, constructed, arranged, and operating substantially as herein described and for the purpose set forth.

Second, the arrangement of the plate X in the end of the case A, in connection with the thumb screw 4, opening 3, and stem, as herein described and for the purpose set forth.

No. 48,298.—Charles R. Moffett, Philadelphia, Penn.—*Grubbing Machine.*—June 20, 1865.—In this machine a curved lever is so rotated upon its convex surface as to fasten the claws to the root, and with a sufficient force lift it from the ground.

Claim.—The lever A, with its curved end and prongs or teeth *e*, combined with the toothed plate E, as and for the purpose described.

No. 48,299.—James Morrison, Jr., Troy, N. Y.—*Ash-pan Drawer and Lifter.*—June 20, 1865.—This invention consists of a handle with one end bent into a shape to fit into a dovetail projection constructed on the front plate of an ash-pan drawer. By means of a mortise in the same end it can be used to shake a grate. The other end is curved and perforated.

Claim.—First, the employment and combination of the lifting device Q with the said ash-pan or box P, or any equivalents therefor, in the manner and for the purposes substantially as herein described and set forth.

Second, the lifting device Q, constructed in the manner and for the purposes substantially as herein described and set forth.

No. 48,300.—E. D. Moyer, Philadelphia, Penn.—*Bottle Stopper.*—June 20, 1865.—This invention consists of a metallic cap filled with elastic material, and provided with a swinging frame, so formed that when the stopper is placed upon the bottle it can be readily pressed under its lip.

Claim.—The bottle stopper, described and shown, the same consisting of the cap A, the elastic water-proof filling *a'*, and the swinging spring frame B, the whole being constructed, arranged, and combined together so as to operate, when applied to the mouth and neck of a bottle, substantially as described, for the purposes specified.

No. 48,301.—Gregory Mulhaupt, Buffalo, N. Y.—*Rock Drill.*—June 20, 1865.—This device consists in so supporting the drill stock in a vertically reciprocating gate—the upward movement of which is produced by a rack and pinion or similar means, and the downward motion by gravity—that while the motion of such gate is fixed and definite, the drill stock is so only in its upward movement, its downward movement being governed entirely by the drill striking the rock so that, as the hole being drilled increases in depth, the drill feeds itself, within certain limits, and strikes quick, hard blows.

Claim.—First, the combination of the drill stock B with a vertically reciprocating frame or cross-head C, the upward motion of which is produced by the action of the pinion E upon the rack F, or other equivalent means, and the downward motion thereof by gravity, in the manner and for the purposes substantially as described.

Second, the combination of the cam L, clutch K, pinion E, and rack F, arranged and operating as described to produce the reciprocating motion of cross-head C, for the purposes set forth.

Third, giving an intermittent rotary motion to the drill stock B by the upward motion of the cross-head acting on the ratchet wheel G', through the medium of the cam wedge J, rock shaft arms J' J3, and pawl G, in the manner substantially as described.

No. 48,302.—John Murdock, South Carver, Mass.—*Portable Kettle Furnace.*—June 20, 1865.—This apparatus is made wholly of cast iron, and the kettle is made to fit into a recess directly over the fire, the whole being so constructed that the products of combustion are made to act more equally on the bottom and sides of said kettle, which is accomplished by a peculiar arrangement of horizontal partition plates forming flues.

Claim.—Combining with the fire-place, kettle, and surrounding cylinder the two rings termed the lower and upper rings to form the two series of flue spaces around the kettle, the lower ring having a flue space through it at one end of the fire-place, and the upper ring a like flue space above the opposite end of the fire-place, and apertures governed by a damper over the flue opening in the lower ring, substantially as and for the purpose specified.

Also, making the cylinder which surrounds the kettle in two parts, the upper part to receive and support the flanch of the kettle, and the lower part with an inward projecting flanch to form the upper ring, in combination with the ring on which the lower part of the cylinder rests, and which forms what is termed the lower ring, as and for the purpose specified.

No. 48,303.—Francis G. Murray, Washington, D. C.—*Manufacture of Gunpowder.*—June 20, 1865.—This invention consists of a mixture of forty-five parts chlorate potash dissolved in twenty gallons of boiling water, and fifteen parts saltpetre is added; also, thirty parts of ground bark, the whole being boiled for twenty minutes, after which eight parts of pulverized charcoal and two parts of lampblack are added, and the whole heated until the water is expelled, when the composition is ready for use.

Claim.—The employment of the within described material, compounded as and for the purpose specified.

No. 48,304.—John Nangle, Mooresville, Ind.—*Weeding Hoe.*—June 20, 1865.—This invention consists in the attachment to the hoe of a handle, by means of a screw, and also the attachment of the blade to the shank in the same manner, so that it can be easily removed therefrom and any other shaped blade attached in its place to enable the operator to suit the tool to the work.

Claim.—The construction, arrangement, and combination of the different parts of the hoe substantially as described.

Also, the method herein described of fastening the hoe to the shank as set forth.

No. 48,305.—Jesse Palmer, Cleveland, Ohio.—*Knife Polisher.*—June 20, 1865.—This invention consists of an oblong box or trough, consisting of a horizontal bottom, provided with side ledges and a hinged cover, which is hinged to the said box at the end in such a manner that when the free end of the cover is depressed the hinged end will slightly bind upon the upper surface of the trough. The upper surface of the trough and the under surface of the cover are lined with leather or cloth, as a rubbing surface for the knife to be cleaned.

Claim.—A knife polisher, constructed and operating as herein described.

No. 48,306.—W. H. Pease, Dayton, Ohio.—*Tobacco Dryer.*—June 20, 1865.—At either end of the dryer are rollers, over which endless belts are turned by gear wheels on the outside. Any number of these belts can be used, so placed one above the other that the tobacco will fall from the top shelf upon the next below, and so on. Heating pipes pass between the belt of one series of rollers and thence outside of the dryer to the next above.

Claim.—The arrangement of the endless belts D D, in connection with the tubes or pipes E, the whole being used and operating as and for the purpose specified.

No. 48,307.—J. Harden Plumstead, Lynn, Mass.—*Halter Clasp.*—June 20, 1865.—This invention consists in constructing a halter by a combination of straps, ring, clasps, and rivets, the latter only going through the leather strap and one side of the clasp; not being stiffly sewed or riveted to the ring, they yield readily to the motion of the animal's head.

Claim.—The ring A as constructed, in combination with the clasps B B, constructed, arranged, and operating as described and for the purposes set forth.

No. 48,308.—Amos W. Price, Adrian, Mich.—*Mosquito Bar or Tent.*—June 20, 1865.—This invention consists of a frame somewhat similar to the frame of an umbrella, though folding differently, and covered with a gauze or netting to prevent the admission of flies or mosquitos.

Claim.—The combination and arrangement of the shaft *a*, the slide *e*, the braces *b*, the arms *c*, the joints *d*, the connecting plates *g*, the folding in the manner shown with the netting *f*, as and for the purpose specified.

No. 48,309.—Fitch Raymond and August Miller, Cleveland, Ohio.—*Fence Gate.*—June 20, 1865.—This gate is provided with a semi-circular arm, one end of which is attached to the top of the gate near the hinged end thereof, and the other end is free. The arm passes around the post to which the gate is hung, and its free end is in the same vertical plane with the gate. When the gate is pushed back the free end of the arm is thrown forward beyond the vertical plane of the fence in which the gate is hung. In this plane is a weight suspended by a cord to the free end of the arm. When this free end is thrown out of the vertical plane of the fence the tendency of the weight is to draw it back again and thus close the gate.

Claim.—The arm F or J, in combination with the gate A, cord *f*, and weight *g*, when combined and operating substantially as and for the purpose set forth.

No. 48,310.—Elisha Robbins, Worcester, Mass.—*Carriage.*—June 20, 1865.—The thills are applied to the carriage by means of a shaft provided with two hangers. The front end of the wagon rests upon a bearer, which rests upon another bearer, supported on the thills. When the horse is drawing the wagon up hill, the thills are raised, carrying up with them the two bearers and the front end of the wagon, and thus bringing the weight of the latter upon the horse's back through the medium of the lugs on the saddle. The horse is thus enabled to get a firmer foothold, owing to this increased weight brought upon his back.

Claim.—The application of the thills or their equivalent to the axle by hangers or a cranked

shaft, as described, and so as to bear against the wagon body, under circumstances and for the purpose substantially as described.

Also, the combination of the conical rollers F G, with their thills, their hangers and the carriage body, arranged and applied together substantially as and to operate as specified.

No. 48,311.—ALFRED ROBINSON, New York, N. Y.—*Mode of Preparing Roofing Material.*—June 20, 1865.—This invention consists in preparing roofing fabric by passing sheets of felt or other material between rollers, the asphalt in a plastic state being applied between the sheets as they pass between the rollers.

Claim.—The method of coating a sheet or sheets of felt or other material to form a roofing fabric with asphalt or other material in a soft or plastic state, applied directly to such fabric in the manner specified.

No. 48,312.—JOHN B. RIDER, Wapello, Ind.—*Machine for Cutting Stalks.*—June 20, 1865.—This machine consists of a roller armed with cutters. Extra wheels are used to transport the machine to and from the field. Sickle-shaped hooks attached to flat springs precede the roller for the purpose of adjusting the stalks in a longitudinal direction for the action of the cutters.

Claim.—The long journals B B, the extra wheels A A, the broad springs C C, with their sickle-shaped hooks, the adjustable cross-bar D and E, when these several parts are arranged and combined with the main roller, armed with cutters; the whole operating conjointly, as and for the purpose specified.

No. 48,313.—BLANEY E. SAMPSON, Boston, Mass.—*Connecting Thills to Carriages.*—June 20, 1865.—Arms placed closely against the shoulders of the axle journals project upward to a suitable height, and in them the thills are fastened by means of screw bolts, in such a manner as to turn freely therein in a vertical plane.

Claim.—The application of the thills to the arms or journals of an axle by means substantially as described, whereby they may be supported by and turn on such arms while in use.

No. 48,314.—GEORGE SAMPSON, Manchester, Me.—*Manufacture of Oilcloth.*—June 20, 1865.—This invention consists in filling up the interstices in the cloth with whiting, ochre, or earth, preparatory to painting on it, and in mixing such substances with the paint to be applied.

Claim.—A composition made of glue, gum, or vegetable sizing, thickened with clay, whiting, ochre, or other earths for filling or levelling up the surface of the cloth to prepare it for painting or printing.

Also, mixing clay largely with the oil paint for coating or painting cloths in the manufacture of painted floor cloths.

No. 48,315.—GILBERT L. SHELDON, Hartsville, Mass.—*Truck for Pulling Stones.*—June 20, 1865.—The frame which forms the bearings for the windlass is supported upon a truck upon two hind wheels, and one or more front wheels, in such a manner that when the team is detached from the draught pole it can be hitched to the drag chain without requiring any time for supporting or securing the truck.

Claim.—The combination of the secondary truck A′ and wheel B′, with the truck A, frame K, windlass I, sheave L, and chains M N, constructed and operating substantially as and for the purpose described.

No. 48,316.—THOMAS J. SLOANE, New York, N. Y.—*Machine for Cutting and Reducing Vegetables.*—June 20, 1865.—The object of this invention is to cut and reduce vegetable substances by a cutting or shearing operation, as set forth in the claim.

Claim.—The combination of the series of square or shear-edge cutters on the shaft with the series of square or shear-edged cutters in the case, arranged and operating substantially as herein described.

Also, sustaining the outer ends of the cutters on the shaft by the rings of the case, in combination with the sustaining of the inner ends of the cutters of the case by the rings on the shaft, substantially as and for the purpose described.

Also, connecting the cutters with the shaft and with the case, by having the cutters attached each separately by a dovetail or equivalent joint to a ring, and the rings to the shaft and case, substantially as described, to facilitate sharpening and other repairs.

No. 48,317.—ERASTUS W. SMITH, New York, N. Y.—*Pier for Bridges.*—June 20, 1865.—This invention is intended to be used in that system of construction in which tubes or hollow cylinders of iron formed in sections or otherwise are sunk through the water, and to a sufficient depth into the earth, and the contents excavated and removed through an air-lock. This general method of construction has been successfully practiced for a number of years. Excavation is carried on within the tube at the bottom of the water, under a pressure of air sufficient to keep out the water, and to allow work to be done under the same conditions as regards pressure as prevail in a diving bell at the same depth. The claim explains the improvement in the method of constructing the hollow piers.

Claim.—First, the employment of calcined plaster or equivalent expansive material in stopping the bottom of hollow piers or shells for submarine masonry, substantially in the manner and for the purpose herein set forth.

Second, stopping the bottom of such shells by grouting or flowing the calcined plaster or analogous semi-fluid material into interstices in previously laid stone, substantially in the manner and for the purpose herein set forth.

No. 48,318.—JOSEPH NOTTINGHAM SMITH, Jersey City, N. J.—*Measuring Faucets.*—June 20, 1865.—In this invention a valve plunger is moved forward in the measuring chamber by a handle turning on a pivot to expel the liquid to be drawn. The movement of the handle is limited by stops on an index plate, which indicates the amount of liquid drawn. When the plunger is drawn back, its valve is opened by the atmospheric pressure on the liquid in the containing vessel, and the liquid is thereby transmitted into the measuring chamber. The valve is closed by a spring sufficiently strong to prevent the pressure of liquid in the vessel from opening it. The liquid in the measuring chamber is retained by a spring valve closing the outlet.

Claim.—Introducing the liquid to be measured into the faucet behind a valved plunger, through which it is transmitted in the backward stroke thereof, and by which it is forced out from the faucet in the forward stroke, substantially as and for the purposes herein set forth.

Also, the outlet valve U, kept closed by a spring, in combination with the valve plunger of a measuring faucet, substantially as and for the purpose herein specified.

Also, actuating the plunger by a handle G or its equivalent, through the means of a gear wheel L, and two equal sized pinions M M, gearing respectively into the plunger racks N N, arranged and operating substantially as and for the purpose herein specified.

Also, the adjustable stop K on the handle G, and stationary pins or projections Y Y, in combination with a measuring faucet for gauging the amount of liquid drawn by rock movement of the handle.

Also, the registering dial H and index *h*, arranged in combination with the actuating handle, so as to indicate and register the whole amount of liquid drawn from the cock or vessel, substantially as herein specified.

Also, the combination and arrangement of the plunger in relation to the operation of its valve and packing, substantially as and for the purposes herein specified.

Also, in combination with a measuring and registering faucet, lining the body of the faucet with tin, brass, or other suitable soft metal or alloy, backed by a cement of hydraulic lime, plaster of Paris or equivalent substance, so that the lining may be removed and replaced when desired, substantially as herein specified.

No. 48,319.—FRANK M. STEARNS, Berea, Ohio.—*Mode of Packing Grindstones.*—June 20, 1865.—This invention consists in nesting grindstones in the form of a barrel by providing a rod of iron passing through the eyes of the stones, and securely fastened to end-boards or heads by nuts; also in having strips of wood fastened at intervals longitudinally around the outside of the nest, and protected by bands of hoop iron.

Claim.—The rods A and B, in combination with the end boards or heads C C, in the manner described and for the purpose set forth.

No. 48,320.—JOHN D. STEWART, Baltimore, Md.—*Tobacco Pipe.*—June 20, 1865.—This invention consists in constructing the hinged cover of a tobacco pipe of a conical or hemispherical form, in the lower part of which, and just above the top of the pipe bowl, is fitted a disk with a perforation in its centre. The cover and disk thus form a chamber, in which is a spiral spring. Down through the cover and disk passes a straight piece of wire with a disk on its lower end, forming a presser for the contents of the pipe. The spiral spring in the cover chamber is attached to the handle of the presser, so as to retract it when forced down into the pipe.

Claim.—Constructing the hinged cover of a tobacco pipe of an inner disk *b* and a bulging outer portion *a*, when the said cover contains within the same a spring *d*, connected with a rod *g* of a follower or tobacco presser *c*, all arranged and operating substantially as herein set forth.

No. 48,321.—O. M. STILLMAN, Westerly, R. I.—*Steam Engine.*—June 20, 1865.—This invention consists of a superheater with its connections, and a jacket enclosing the entire cylinder in such a manner that superheated steam, before entering the cylinder, travels the entire circumference of the same, for the two fold purpose of reducing the temperature of the steam and increasing the temperature of the cylinder, with a view of preventing condensation in the same.

Claim.—First, the jacket E and cylinder G, constructed and arranged as described, in combination with the superheater C through which the steam passes on its way to the jacket, substantially as and for the purpose herein set forth.

Second, the within-described arrangement of the steam jacket E and cylinder G, whereby the steam is compelled to flow uniformly, or nearly so, over the cylindrical surface and through one or both heads of the cylinder, in the manner and for the purpose substantially as herein set forth.

Third, the within-described arrangement of the superheater C, the automatic regulator N and its connections, the steam jacket E, and the cylinder G, so as to operate together, in the manner and for the purpose substantially as herein set forth.

Fourth, the incombustible clothing K, the jacket E, cylinder G, and superheater C, arranged to operate together, substantially in the manner and for the purpose herein set forth.

No. 48,322.—WILLIAM TALLMAN, Manteno, Ill.—*Gate.*—June 20, 1865.—This gate slides upon two rollers, one of which is under the bottom rail and the other under the second rail from the bottom. This second roller is stepped in two posts, between which the gate passes. These two posts are not placed exactly opposite each other, but diagonally opposite, so that by lifting one end of the gate clear from the ground it may be swung round upon the secondary roller as a pivot, and be placed at right angles to its position when closed.

Claim.—The combination of the gate A, constructed as above set forth, and resting at one end on a roller, with posts B B′ set in relation to each other as shown, and operating as described.

No. 48,323.—JAMES GAMAGE TARR and AUGUSTUS HENRY WONSON, Gloucester, Mass.—*Paint for the Bottoms of Ships.*—June 20, 1865.—This invention consists of a composition of wood coal tar, naptha from coal or petroleum, oxide of copper, oxide of the alloys of copper, ochre or iron ore, and oxide of arsenic.

Claim.—An improved composition, formed essentially as set forth and for the purpose specified.

No. 48,324.—H. M. TEASDALE, Dansville, N. Y.—*Cultivator.*—June 20, 1865.—In this invention wings extend obliquely up from the front plough to the beams just above the rear plough. A removable plough with a continuation of the coulter upon it slides on with a groove and is secured by screws.

Claim.—First, the arrangement of the inclined wings E′ E′ with the double plough E and the beams D D, in the manner and for the purpose described.

Second, the construction of the point represented in Figs. 4 and 5, in combination with the parts E *b d*, substantially as and for the purpose herein described.

No. 48,325.—C. C. TEMPLE, Saco, Me.—*Cloth Registering Attachment for Looms.*—June 20, 1865.—This device, with its several dials, may register from one yard to thousands, and is designed also as a check against the felonious abstraction of cloth from the loom without detection.

Claim.—The registering mechanism herein described, consisting of the wheel *b*, provided with projections to seize the fabric, worm wheels *d h* and *l*, endless screws *c k* and *g*, and disks *j f* and *n*, substantially as and for the purposes herein set forth.

No. 48,326.—JAMES H. THOMPSON, Hoboken, N. J.—*Grain-huller.*—June 20, 1865.—This huller consists of three inverted frusta of cones, set one above another upon an upright shaft, spirally fluted upon their exterior surface, and of different sizes, the upper being the largest and the lower the smallest. The huller is enclosed in an inverted conical case. The lower periphery of each frustum is distant from the inner surface of the enclosing case only far enough to allow one grain to pass between, while the upper periphery is not so close to the case; consequently, when the space between the hullers and the case is full of corn, and the hullers are set in rotation, the hulls are removed by the pressure and attrition of the grains upon each other, whereby danger of crushing them is avoided.

Claim.—The combination of the inverted, fluted, conic frustums D, conical case B, and lateral projections or prominences *c c c*, all constructed and arranged and operating substantially as specified.

No. 48,327.—JUSTUS A. TRAUT, New Britain, Conn.—*Joint of Folding Rules.*—June 20, 1865.—In the centre piece of the rule is made a rectangular slit, in which is inserted a metallic spring for the purpose of producing rigidity, or, in other words, holding the rule with some degree of firmness to whatever degree it may be opened.

Claim.—First, the slit C in the centre piece *a′* of the joint *a*, for the purpose of receiving a device for producing tension or rigidness, substantially as and for the purpose described.

Second, the employment of a metal piece *d*, or its equivalent, placed in the slits of the joint *a*, substantially as and for the purpose described.

No. 48,328.—T. TROWBRIDGE, Danbury, Conn.—*Composition for Stiffening Hat Bodies.*—June 20, 1865.—This invention consists of a composition made by dissolving twenty-seven pounds of shellac acid and three pounds of sal soda in five gallons of hot water, and, after the shellac is dissolved, adding seven ounces of salt dissolved in one gallon of hot water.

Claim.—The within described composition, made of the ingredients specified, substantially as set forth.

No. 48,329.—JAMES R. WALLACE, Franklin, Ohio.—*Grain and Grass Seed Separator.*—June 20, 1865.—In this invention a series of sieves are hooked together, and rest at one end

upon the cross-bar of a frame, and at the other end rest upon a square shaft. This shaft by its rotation agitates the sieves. The shaft rests upon adjustable supports, and the device is to be used, without casing or fan, as a hand screen.

Claim.—The employment or use of a series of screws connected together as shown, and suspended within a suitable framing on a square shaft which is supported by adjustable bearings or blocks E E, all arranged to operate in the manner substantially as and for the purpose herein set forth.

No. 48,330.—HENRY A. WHITNEY, Brooklyn, N. Y.—*Device for Unloading or Storing Freight.*—June 20, 1855.—The ways on which the truck moves are adjustable, so as to change the inclination, and make the truck run in either direction. This is done by means of a windlass. A suspended platform is used to convey goods from the ground to the truck.

Claim.—First, the elevated ways A A, arranged in the manner shown, to admit of being adjusted in an inclined position for the movement of the car or truck B on the ways, for the purpose specified.

Second, in combination with the above, the suspended hoisting device G H J with the platform I attached.

No. 48,331.—JAMES P. WIGAL, Neago, Ill.—*Steam Pressure Gauge.*—June 20, 1865.—This invention consists in the peculiar construction of the coiled auger-shaped tube, and its combination with a plug, arm, segment, pinion, and index.

Claim.—The coiled auger-shaped tube B, in combination with the plug A, arm *d*. segment *f*, pinion *h*, and index *i*, constructed and operating substantially as and for the purpose set forth.

No. 48,332.—WARREN WRIGHT, Springfield, Ohio.—*Hominy Mills.*—June 20, 1865.—This mill is divided into a number of compartments (usually six) by a series of transverse diaphragms. A vertical shaft passes down through all the diaphragms, and is provided with ribbed blades. From one compartment to another are annular openings around the central shaft. The grain being poured into the upper compartment, fills it and then crowds the kernels down through the annular opening into the next lower compartment, and then into the next, and so on until the mill becomes full, when the tendency of the mass is, by a downward, spiral, helical motion, toward the place of discharge.

Claim.—First, in combination with diaphragms G, the series of screws H, formed so as to be cast in entire cylinders, having the longitudinal slits *h* from their lower to near their upper margins, substantially as set forth.

Second, the series of symmetrical, equal, annular, and two parted diaphragms G G′ G2, capable of transposition and reversal, substantially as and for the purpose set forth.

Third, the provision of the lip *g′* or lips *g* and *g″*, at the interior margin of the annular diaphragms G G G2, for the purpose explained.

Fourth, the enclosing case, composed of a series of entire cylindrical screens H H′ H2 and marginally grooved annular diaphragms G G′ G2, as represented.

Fifth, in the described combination with the series of diaphragms G G′ G2, having equal central apertures, the floating suction heater L M, substantially as set forth.

Sixth, the arrangement of diaphragms G G′ G2, having equal central apertures, in combination with the flaring and vertically adjustable suction beater L M, substantially as set forth.

No. 48,333.—ROBERT WYATT, Brooklyn, N. Y.—*Fire Escape.*—June 20, 1865.—This invention consists of a fire escape, to be attached to the exterior of a dwelling-house or other building, without defacing it or obstructing the sidewalk of a street, and to which, while it affords no facilities for burglars, access may be had from the several stories of a building, so that persons on the several floors may put it in a state for use without difficulty.

Claim.—First, the combination of the vertical slotted tube A A A4, the bar *g*, and the hinged rounds *h h*, substantially as herein described, the whole forming a folding fire-escape ladder.

Second, the bar D, catch *f*, and cap C, in combination with each other and with the slotted tube A A′ A4, bar *g*, and hinged rounds *h h*, substantially as and for the purpose herein specified.

No. 48,334.—THOMAS G. CROSBY, assignor to GEORGE H. STRONG and M. H. CROSBY, Buffalo, N. Y.—*Raising and Lowering Signal Lamps.*—June 20, 1865.—This invention consists in providing a pole or mast with two upright rods extending up along the sides thereof parallel with each other. Upon these rods a frame is made to move up and down by means of a rope and pulley. This frame contains a signal lamp, and is so constructed that the lamp may be easily put in or taken out.

Claim.—The rods or slides A B, or their equivalent, in combination with the rope or cord M, the pulley I, or its equivalent, and the frame J K, for holding the lamp, when constructed to operate as herein substantially set forth and described.

No. 48,335.—J. L. FOUNTAIN, assignor to himself and A. FOUNTAIN, New Milford, Ill.—*Harvesting Machine.*—June 20, 1865.—This invention relates to the peculiar arrangement

for raising and lowering the cutting apparatus, and to the manner of connecting therewith the reel band pulley, whereby said reel band is kept taut with the cutters at different elevations.

Claim.—First, the arrangement of the link *g*, arms *c'* and *f*, link *i* and *p*, in combination with the piece E of the mowing frame and guides *d d* and *b*, substantially as and for the purpose described.

Second, the rod *n* and lever *h'*, in combination with the lever *n'*, pulley N, and belt *l*, as and for the purpose set forth.

Third, the adjustable arm J and guides J', in combination with the pulley lever *n'* and shoe, as and for the purposes described.

Fourth, the peculiar arrangement of the pulleys G *h''* *g'* and I, in combination with the reel standard F, piece F', when operating conjointly as and for the purpose set forth.

No. 48,336.—Russel Frisbie, assignor to Ira K. and Elmore Penfield, Middletown, Conn.—*Tackle Hook.*—June 20, 1865.—This invention consists of many straps or enclosing devices extending from the shank to the point of the hook. The instrument is in the enclosed shank and the means of operating it. To enclose or free the cord or chain, the strap is in two parts hinged together by a spring bolt.

Claim.—A strap which swivels on the shank of a tackle hook, and is made in two parts that are hinged together, in combination with a spring bolt, constructed and operating substantially as and for the purpose set forth.

No. 48,337.—Joshua Gray, Medford, Mass., assignor to himself, E. H. Eldridge, Boston, Mass., and S. S. Bucklin, Providence, R. I.—*Cartridge Retractor for Breech-loading Fire-arms.*—June 20, 1865.—A sliding cartridge retractor is provided with a longitudinal slot through the bottom or horizontal stem, within which slot plays the heel of a tripping lever. On the breech-block being drawn backward longitudinally by an appropriate lever, it begins to engage the sliding retractor, and drawing with it until the limit of the slot strikes the tripping lever, and thus raising it, ejects the cartridge. The said tripping lever forms also a guide for the introduction of a new cartridge.

Claim.—First, the cartridge extractor C, provided with the slot *f*, in combination with the guide and expeller B, substantially as and for the purpose described.

Second, the sliding breech-pin D, extractor C, and guide and expeller B, when constructed, combined, and operating substantially as described.

No. 48,338.—Thomas S. Hudson and Anthony Hardy, assignors to Thomas S. Hudson, Cambridge, Mass.—*Hand Stamp.*—June 20, 1865.—This invention consists in combining with the devices used for printing the month and year, or the name or names of one or more persons, places, or things, a changeable mechanism or series of types by which the day of the month may also be printed at the same time with the other imprints. In the neck of the frame is made a chamber for holding the types for printing the months or years and months. To the plunger, by one or more clamp screws, is secured a chase capable of holding the types that do not require to be changed.

Claim.—First, the combination of the endless chain of types and its carrying mechanism with the plunger.

Second, the combination of the endless chain of types and its carrying mechanism with the plunger and the chase, the whole being arranged together as specified.

Third, the combination of the endless chain of types and its carrying mechanism with the chase, the plunger, and printing ribbon, arranged as specified.

Fourth, the combination of the type chamber *d*, in the neck *c* of the frame, with the endless chain of type, its carrying mechanism, the chase, and the plunger, arranged to operate as described.

Fifth, the combination of one or more elastic cushions or masses of vulcanized India-rubber *s s* with the frame and plunger of the press, such cushion or cushions being arranged on the bottom of the said frame, and for the purpose as explained.

Sixth, the combination of the catch wheel *o* and spring catch *p* with the endless type chain, its sprocket wheels, the chase, and the bed, arranged so as to co-operate as specified.

No. 48,339.—Antona Kieffer, assignor to himself and James Kennedy, Buffalo, N. Y.—*Device for Releasing Screw Engines when Stopped on their Dead Centres.*—June 20, 1865.—On the crank-shaft is a prying-off wheel, as usual, by the side of which is a prying-off lever provided with a pawl for insertion into the teeth of the prying-off wheel. The upper end of the lever comes up into the engineer's room. A rod passes from the end of the pawl, also into the engineer's room, so that by stepping on the end of the rod he can force the pawl to engage with the teeth of the wheel, when, by pulling on the lever, he can start the shaft. The pawl is counterbalanced, so that when the pressure is taken off, the pawl will be removed from contact with the prying-off wheel.

Claim.—The counterbalanced pawl D, provided with a pawl rod F, in combination with the toothed wheel B, and prying-off lever C, for the purposes and substantially as described.

No. 48,340.—Charles H. Johnson, assignor to himself and Eugene Woodman, Boston, Mass.—*Argand Gas Burner.*—June 20, 1865.—This invention consists in various com-

binations of numerous parts of a gas burner, which are designated in the claim and shown in the engraving.

Claim.—The arrangement and combination of the foraminous partition *e* with the tip *b*, its chamber *a*, and the conduits leading into and out of such chamber.

Also, the combination of the tip *b* with the groove *f*, in its upper surface or end, or with the said groove *f*, in its upper surface or end, and also with another groove *g*, arranged in its lower surface or end.

Also, the tip, as made with each of its jet holes countersunk at either or both of its extremities, and for the purpose specified.

Also, the tip, as made with a groove *f* in its upper surface or end, and with each of its jet holes countersunk at its upper end.

Also, the tip, as made with a groove *f* in its upper surface or end, and with each of its jet holes countersunk at both of its extremities.

No. 48,341.—WILHELM KLOENNE, assignor to himself and G. HUBNER, New York, N. Y.—*Bottle Stopper.*—June 20, 1865.—This invention consists of a plug of wood, to which is attached a rubber tube. Through the centre of the plug passes a rod, the lower end of which forms a conical valve. When the stopper is placed in a bottle containing liquid under pressure, the gas in the liquid forces the valve upward and presses the rubber tube against the neck of the bottle, making a tight joint.

Claim.—A bottle stopper, composed of a plug A, spring valve B, and elastic tube C, substantially as herein set forth.

No. 48,342.—JOSEPH H. LANING and VERON FLETCHER, Philadelphia, Penn., assignors to VERON FLETCHER.—*Sectional Folding Boats.*—June 20, 1865; antedated June 15, 1865.—This invention consists in constructing boats so that they may be folded away into a small compass. In each joint is a vulcanized rubber tube, combined with hinges and adjustable sections.

Claim.—The peculiar manner of constructing boats of movable and adjustable sections, so connected with hinges, part thereof affixed on the inside of the boat, and part thereof on the outside, so as to move in harmony with each other, whereby the boat can be opened and closed at will.

Also, the combination of hinges, vulcanized India-rubber tubing, and movable and adjustable sections, for the purpose as hereinbefore more fully set forth, and substantially as described in both clauses.

No. 48,343.—THOMAS J. LOVEGROVE, Philadelphia, Penn., assignor to himself and HENRY BALDWIN, jr.—*Machine for Boring Artesian Wells.*—June 20, 1865.—The object of this invention is to dispense with the derricks heretofore used in boring oil wells; to attain greater freedom of access to the mechanism; to raise and lower the drill automatically at any desired rate of speed, and thus to regulate the feed of the drill; to turn the drill automatically while working; and, finally, so to arrange the mechanism that all these movements can be effected and controlled by one person, and from one position, so as to avoid the necessity of running from place to place and stopping the work while adjusting some portion of the mechanism.

Claim.—First, vibrating the mechanism which supports, raises, lowers, feeds, and rotates the drill directly over the hole, so as to dispense with a derrick.

Second, rotating the drill automatically by mechanism actuated by the vibration of the parts which sustain it, substantially in the manner described.

Third, a mechanism which automatically and simultaneously vibrates, feeds, and rotates the drill.

Fourth, connecting one end of a walking beam or vibrating lever to the motor, and the other to the drill, by mechanism which gives the drill an intermittent axial rotation.

Fifth, combining with a walking beam or vibrating lever a mechanism actuated by the reciprocation of the beam intermittently to rotate the drill, and a mechanism similarly actuated for raising and lowering, and feeding the drill.

Sixth, combining with a vibrating mechanism which supports and rotates the drill, a mechanism independent of the vibrations of the beam, to raise or lower the drill.

Seventh, controlling the feed of the drill by the differential movement of the rotating and lowering mechanism.

Eighth, a drill-rope spool rotating both on a vertical and a horizontal axis, and having a vertical reciprocation.

Ninth, making the fulcrum of the walking beam the axis of motion, upon which the mechanism is supported for rotating the drill automatically, and raising and lowering it, substantially in the manner described, for the purposes set forth.

No. 48,344.—THOMAS J. LOVEGROVE, Philadelphia, Penn., assignor to himself and HENRY BALDWIN, jr.—*Steam Engine Governor.*—June 20, 1865.—This invention consists in arranging upon the top of the frame-work a revolving single chamber, to contain crude mercury and a float to rest upon the top of the mercury, for the purpose of controlling the

motion of the engine. Attached to the float is a rod that extends down through the hollow spindle upon which the gear wheel is placed, that gives motion to it, and to the lower end of this the lever which operates the throttle-valve is connected, in such a manner that when the engine is at rest the float in the chamber rests upon the mercury, and the valve is held in a closed position; but when the engine is in motion the mercury is dispersed in proportion to its speed, and the float settles down in the chamber, and the throttle is closed relatively, and the speed of the engine correspondingly reduced.

Claim.—First, the employment of the single closed chamber in a governor to contain crude mercury to control the engine, substantially as described.

Second, supporting a valve stem in a single closed chamber upon crude mercury, so that the valve shall close when the mercury is at rest in the chamber, and open when the mercury is diffused by centrifugal motion over the chamber and float, substantially in the manner described.

Third, the revolving closed chamber to contain mercury, combined with a float, to be operated by the mercury, substantially in the manner and for the purpose set forth.

Fourth, the combination of the sleeve E, the revolving chamber H, the float J, and the valve stem L, substantially in the manner and for the purposes set forth.

No. 48,345.—JOHN MCCLOSKY, assignor to himself and SAMUEL B. BALLOU, New York, N. Y.—*Sewing Machine.*—June 20, 1865.—By this invention the Wheeler & Wilson machine is capable of making a single threaded stitch, or a chain-stitch interlocked with a second or lower thread. To effect this a supplemental hook is used, either secured to the disk bobbin or to a separate concave disk fitting on one side of the ordinary disk bobbin; no other change being required.

Claim.—The hook A, constructed and applied to operate substantially as herein described, in combination with the rotating hook C, bobbin B, and needle, for the purpose herein set forth.

No. 48,346.—MILTON V. NOBLES, Rochester, N. Y., assignor to himself and JOHN C. NOBLES, Rushford, N. Y.—*Bit Stock.*—June 20, 1865.—This invention consists of a solid socket to receive the shank of the bit, over which is a split sleeve or ferrule pivoted, so as to open and let the bit-shank into the socket, when it is closed around the outside of the socket and over the end, embracing the bit tightly, being thus held by a ring slipped down on the outside of the sleeve.

Claim.—The combination of the uncut or solid socket with the split ferrule, ring and catch, by which the bit or other tool may be firmly held in the stock, and readily released therefrom, substantially as described.

No. 48,347.—JAMES SCANLAN, assignor to himself, S. J. STINE, and GEORGE ROSS, Lebanon, Penn.—*Paper-making Machine.*—June 20, 1865.—In this invention a roller prevents the water issuing from the perforated pipe, and from running back upon the pulp; and the third felt operating in conjunction with the first one, the pulp passing between them, supersedes the ordinary roll-cloth; and being constantly washed clean, and the water pressed out of it in its circuit, allows the water from the pulp to pass upwards through it. A third polishing roller smooths that side of the paper which has been in contact with the first felt.

Claim.—First, the couching roller A, with its lever attachment S S′ R, in combination with the Fourdrinier wire cloth apron U, situated and operating in the manner and for the purpose specified.

Second, the third felt, in combination with the wash box L, its washers V, racks N, and rollers 1 2 3 4 5 6 7 8 9 and 10, arranged and operating substantially as set forth.

Third, the polishing roller I in the second press, in combination with the press-rollers G H.

Fourth, the combination of the Fourdrinier machine for making paper boards out of straw, sorghum, or other material, in combination with the third felt and felt-washer arrangement, as described.

No. 48,348.—JOHN SHIM, Leverington, Penn., assignor to himself, GEORGE S. HARWOOD, and GEORGE H. QUINCY.—*Machinery for Oiling Wool.*—June 20, 1865.—The claim sufficiently defines the nature of this invention.

Claim.—First, in wool-oiling machinery the combination of the bed *a* and grooved roller *b*, revolving inside of the tank, as and for the purpose described above.

Second, an endless cloth of wire, or a pressure roller covered with wire, mounted just above the feed cloth, to receive the oil after being discharged from the tank, and convey it to the wool on the feed cloth, as above described.

No. 48,349.—WILLIAM A. WRIGHT and JAMES MOLYNEUX, Bordentown, N. J., assignors to the BORDENTOWN MACHINE COMPANY.—*Saw Mill.*—June 20, 1865.—The object of this invention is to saw timber to any bevel or angle, or to a circle, and consists in providing a frame that can be rotated by means as described, so as to carry another frame, having a reciprocating saw, to any required angle from the perpendicular. It also consists in having the table upon which the timber is fed revolve, so as to move the stuff or stock to be cut in

a circular direction. Also, in providing a feed or carrying roller, which rises above the surface of the table, and is revolved by the action of an eccentric attached to the crank, which operates on a spring having two pawls working in ratchet wheels at the ends of the roller.

Claim.—First, the frame E, its teeth *a*, the worm *b*, saw frame G, pitman *f*, driving shaft H, crank *h*, the whole being arranged for joint action, and in respect to the stationary frame, as and for the purpose herein set forth.

Second, the movable table I, with its roller K, in combination with the movable frames E and G.

Third, the roller *k*, its ratchet wheel, the plate L, and pawls *m*, and wheel *h*, or its equivalent, the whole being arranged and operating substantially as and for the purpose herein set forth.

No. 48,350.—FRANCIS FEARON, London, Eng.—*Apparatus for Deadening Sound.*—June 20, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—The exclusive use of an apparatus for softening or deadening sound, by means of pressure on the tragus of each ear, substantially as herein described and illustrated by the drawing.

No. 48,351.—MARTYN J. ROBERTS, Pendarren House, Crickhowell, South Wales, Eng.—*Apparatus for Oiling Wool.*—June 20, 1865; patented in Belgium October 29, 1863.—This invention will be understood by reference to the claim and engraving.

Claim.—First, a reservoir in combination with revolving blades and a trough or gutter, the three being constructed and operated substantially as described.

Second, in combination with a perforated revolving disk or sprinkler, a tube or passage way leading to the disk, a gutter supplying liquid to the passage way, and revolving blades for raising liquid into the gutter, all these parts being and acting in combination as described.

Third, a revolving sprinkling disk in combination with a cover and a slotted pan, a tube, and a reservoir provided with a partition, as described, these parts being constructed and operating in combination, substantially as set forth.

Fourth, in combination, the following parts, when constructed and operating substantially as set forth, viz: 1st, a reservoir provided with a gutter and a partition; 2d, revolving blades; 3d, a revolving sprinkler supplied by the gutter; 4th, a roof and a slotted pan; and 5th, a tube extending from the pan to the reservoir.

No. 48,352.—ANTOINE JOSEPH SAX, Paris, France.—*Apparatus for Impregnating the Air of Rooms with Antiseptic Vapors.*—June 20, 1865.—This invention consists of a trough for holding the substance from which the vapors are to be generated. A lid, to which is attached blades, is supported by an adjustable frame in such a manner that it can be suspended at any desired height above the top of the trough to allow the vapors to escape. The frame also serves as a handle when the vessel is closed.

Claim.—An apparatus composed of the reservoir A and movable and adjustable impregnator B, substantially as herein described, for the purpose of impregnating the air of rooms, hospitals, and other buildings with the vapor of antiseptic substances, as herein described.

No. 48,353.—H. N. ARMSTRONG, Erie, Penn.—*Stop Washer for Nuts.*—June 27, 1865.—In this invention the washers are formed from a strip of metal of the proper size, into which holes are made of a size and distance apart to suit the bolts on which they are to be used. In the sides of this strip, near each hole, notches are cut, and over the lips thus formed the corners of the nut can be turned, and when sufficiently tight said lips are turned up against the nut to prevent it turning back and becoming loose.

Claim.—Cutting the edges of the fixed washer and turning up the corners thus formed to hold the nut from being forced back on its thread.

No. 48,354.—GEORGE ASMUS, Houghton, Mich.—*Device for Removing Lamp Chimneys.*—June 27, 1865.—This invention consists of a holder constructed of metal, with cork cushions, to remove the glass chimney from the lamp without burning the fingers or fracturing the glass.

Claim.—As an improved article of manufacture, a lamp chimney holder, made substantially as herein described.

No. 48,355.—CHRISTOPHER D. BAKER, Wheeling, West Va.—*Furnace for Boiling Iron.*—June 27, 1865.—This invention consists in the construction of the chill or iron bed, in a peculiar method of locating the chimney aperture relatively to the iron chamber, and in the structure of the exit flue. This invention is designed to insure the more economical working of the iron, both in respect to coal saved and in the actual effective influence on the iron itself.

Claim.—First, placing the iron chamber in the described position relatively to the exit flue, for the purpose described.

Second, shelving upwardly the margin of the floor of the chamber, in the manner and for the purpose set forth.

Third, shelving outwardly the chill or wall of the iron chamber, for the purpose described.

Fourth, making the throat or regulating point at the entrance of the neck, so as to limit the reverberation to the chamber itself.

Fifth, making the lower end of the stack flue inclined, and as such leading towards the flue which connects to the iron chamber, so as to favor the discharge of detritus collecting in the flues into the said chamber.

No. 48,356.—WILLIAM S. BARNES, Watertown, N. Y.—*Clasp for Holding Neckties and Shirt Collars together.*—June 27, 1865.—This invention consists of a piece of metal doubled, with a spring at the bend. When applied from beneath it clamps the cravat and collar together.

Claim.—As a new article of manufacture, a clasp for holding the necktie in place on the collar, substantially as described.

No. 48,357.—JOHN P. BEATTY, Norwalk, Conn.—*Hat.*—June 27, 1865.—This invention will be understood by reference to the claim.

Claim.—As a new article of manufacture, a hat composed chiefly of straw and provided with a supplementary brim of enamelled paper, made and applied as and for the purposes herein specified.

No. 48,358.—JOHN T. BEVER, Bethel, Ill.—*Cultivator.*—June 27, 1865.—In this invention a rectangular frame carrying plough standards moves freely upon a square frame underneath, and is attached to the latter frame by a clevis and guide furnished with notches, so that by depressing the handles in the rear the front of the frame rises upon this guide and is held in an elevated position.

Claim.—First, the lever handles I I containing uprights *d d*, with cross-bars X X, made in solid framing to vibrate upon pivot P, in combination with beam or tongue A, and clevis N.

Second, the arrangement of the elevating clevis N, clevis guide *o*, cleats or notches *r r*, and corresponding notches *s s*, as and for the purposes herein specified.

No. 48,359.—G. F. BIGELOW, Chicago, Ill.—*Paper Collar.*—June 27, 1865.—In this invention the band is formed of strong plain paper. The turn-down part is attached thereto by a piece of flexible material pasted on the outside of the band and collar. When the collar is turned down, the band and flexible piece are both concealed. The side of the collar exposed to view may be finished in any desired manner.

Claim.—A turn-down paper collar, made from two or more pieces, one or both or all of which are made of enamelled card board or any other material, substantially the same for the purpose, constructed and operating substantially as described.

No. 48,360.—F. BREWER, Collinsville, Ill.—*Device for Converting Motion.*—June 27, 1865.—This invention consists in a toothed segment gearing in a stationary toothed rack. To the centre of the segment is attached one end of a piston rod, which is moved to and fro horizontally in the ordinary manner by steam in a cylinder. To a projection on the segment opposite the teeth is attached one end of a pitman, the other end of which is connected with a wheel in such a manner that the reciprocating motion of the piston is converted into rotary motion.

Claim.—The employment or use of a toothed segment gearing into a stationary toothed rack, in combination with the piston rod of an engine or other equivalent part, and with the pitman shaft to which a rotary motion is to be imparted, all constructed and operating substantially as and for the purpose set forth.

No. 48,361.—O. H. BREWER, Shannon, Ill., and WILLIAM WIMER, Freeport, Ill.—*Apparatus for Tanning.*—June 27, 1865.—This invention consists of an ordinary tanning vat, to the top of which is secured an air-tight vessel provided with an aperture, through which the hides may be inserted. In the inside of this vessel is a rack for supporting the hides. The vessel communicates with the vat by means of pipes. An exhaust pump is attached to the pipe, by means of which the air may be withdrawn from the vessel, the pressure being regulated by a valve.

Claim.—The herein-described apparatus, consisting of the vat A, chamber B, pipes E G H, and valve F, when these several parts are combined, arranged, and operated as and for the purpose herein specified.

No. 48,362.—HARRISON T. BRIGGS, South Bend, Ind.—*Rotary Steam Engine.*—June 27, 1865.—This invention consists in the arrangement of the induction and eduction pipes, with reference to the sliding pistons and the adjustable abutment, so that the motion of the engine may be reversed by closing the cocks, or valves, in one set of the pipes and opening those in the other; and this may be done at any time without in any other respect affecting the operation of the engine.

Claim.—The arrangement of the ingress and egress pipes L M N O, with reference to the valves I K and the adjustable partition D and central wheel G, substantially as herein set forth.

No. 48,363.—Robert D. Brown, Covington, Ind.—*Binding Attachment to Harvesters.*—June 27, 1865.—This invention consists in a vibrating cutting board; a cradle of hinged sections, in which the gavel is grasped; in the manner of attaching a spring to the hinged cradle to limit its size and open the cradle; an arrangement of gripping fingers, which hold one end of the band while the gripping jaws seize the other end and wrap it around the end held by the fingers, these parts receiving their appropriate intermittent motion by gearing; and in the tucking hand and holder which are advanced to the work, on arrival at which, the tucker is rotated, pushing the tuck under the band, while the latter is restrained by the holder.

Claim.—First, the cutting board I, operated as described, for cutting up that end of the sheaf.

Second, the cradle, constructed and operated as described—that is to say, consisting of the stationary part J and the double-hinged movable part J, which is raised by means of the cam K, and jointed slide L M N, substantially as described.

Third, the arrangement of the spring or springs *j''* on the inside of the cradle, for the purpose of adjusting its capacity to varying sizes of gavels, when said spring is employed for opening the said cradle, substantially as described.

Fourth, the combination of the non-rotating gripping fingers P P and the rotating gripping jaws O O, whereby one end of the band is twisted around the other, in the manner described.

Fifth, the combination of the sliding mandrel *t* and head R with the rotary sleeve Q, furnished respectively with the toed gripping fingers P P and gripping jaws O O, which, by the protrusion or withdrawal of the mandrel, are caused to open and shut in the manner described.

Sixth, the method described of producing the intermittent revolution of the sleeve—that is to say, the combination of the wheel V, with its pin *v*, and the wheel Y, with its teeth *y*, and the sleeve pinion A, which secures one complete revolution of the sleeve *s* to a revolution of the wheel V, but periodically, and then at a speed commensurate with the delay due to its intermittent functions.

Seventh, the combination of the pivoted post *a*, carrying the pins *d d*, or analogous holding devices, with the pinion sleeve *e b*, carrying a tucking hand *c*, so that, after advancing to the point where the tuck is to be made, the said sleeve shall be rotated by a rack or other device, which is brought to engage therewith, and the hand caused to push the twist or knot under the band.

Eighth, pushing the knot under the band by means of a device, which is independent of the sheaf-holding and twisting devices, and which is advanced for that purpose, in connection with a holder, without rotating until it reaches the desired point, when it is caused to rotate to push the knot under the band, while the latter is restrained by the holder from lateral displacement.

No. 48,364.—Ezra Calderwood, Portland, Me.—*Attaching Trace to Whiffletree.*—June 27, 1865.—The object of this invention is to obtain a means for attaching traces to whiffletrees, whereby the horse, in case of necessity, as, for instance, in running away, may be instantly disconnected, and many accidents, which now occur from that and similar causes, be avoided.

Claim.—The sliding bars B B, provided with the pendent lips *e' e'*, to receive pins or rods *a a* at the ends of the whiffletree, in connection with the sliding slotted plate C, operated by a lever E, all being arranged and applied substantially in the manner as and for the purpose specified.

No. 48,365.—James M. Caller, Salem, Mass.—*Method of Treating Tan Bark.*—June 27, 1865.—This invention consists in grinding the bark, and then subjecting it to the action of steam, after which it is leached with hot water until the tannin is dissolved, and the extract thus obtained is evaporated to dryness, when it is ready for use.

Claim.—The process, hereinbefore described, of producing a solid extract from tan bark by steaming, leaching, and subsequent evaporation in vacuo.

No. 48,366.—R. W. Carpenter, New York, N. Y.—*Tremolo Attachment.*—June 27, 1865.—This invention consists of a wing-fan, made to revolve by a spring and corded shaft.

Claim.—The application of means to the instrument by which the air may be agitated to produce a tremulous note, substantially as described.

No. 48,367.—Robert A. Chesebrough, New York, N. Y.—*Process for Distilling Petroleum.*—June 27, 1865.—This invention consists in filtering the petroleum, after distillation, through a mixture of bone-dust and pulverized oyster shells. The mixture is supported in the filtering vessel by a layer of cotton cloth.

Claim.—The combination of bone-dust, pulverized oyster shells, and cotton cloth, for purifying, filtering, and deodorizing petroleum, naphtha, and heavy oil, as herein described.

No. 48,368.—Edwin Chesterman, Roxbury, Mass.—*Boot and Shoe.*—June 27, 1865.—This invention consists in a boot or shoe made of canvass, cloth, or other material, saturated with India-rubber, and vulcanized after having been formed over a last.

Claim.—A boot or shoe, made as herein described, as a new article of manufacture.

No. 48,369.—GEORGE F. CLEMONS, Springfield, Mass.—*Cloth-guide for Sewing Machine.*—June 27, 1865.—In this invention a pivoted spring piece serves, by its inclined position relatively to the straight guide, and by its pressure on the cloth, to insure the forcing of the edge of the cloth against that guide; and it is adjustable to any desired inclination. It may, with its attachments, be used either with or without the ordinary straight guide.

Claim.—The spring E, or its equivalent, when applied to a sewing machine, substantially in the manner and for the purpose described.

No. 48,370.—GEORGE COFFIN, Jamaica Plains, Mass.—*Anchor.*—June 27, 1865.—This invention is explained by the claim.

Claim.—First, the form of the anchor stock, herein described, consisting in making its end of a hook-shape, with inclined or rounding sides, and with flanged or inclined side edges, either when combined together in one and the same stock or when used separately, substantially as and for the purposes specified.

Second, making the end of the shank to which the stock of the anchor is secured in a forked shape, fastened to and within the stock by means of pins, or their equivalents, substantially as described and for the purpose specified.

Third, hanging the shackle ring, to which the anchor is hung, to and within the stock of the anchor, by means of a connecting band, arranged and operating as described and for the purpose set forth.

No. 48,371.—WILLIAM COUSINS, New York, N. Y.—*Arrow Projectile for Ordnance.*—June 27, 1865.—In this invention a projectile of ordinary form for cannon is provided with a long stem projecting from its point or front and extending beyond the muzzle of the gun, the said stem being armed at its forward end with a wide transverse barb or blade, which rests upon and is guided by two side arms, attached to the muzzle of the cannon by a band or ring.

Claim.—The combination of the elongated projectile D E F and guides B C, constructed and operating in the manner and for the purpose specified.

No. 48,372.—RICHARD COVERT, Brooklyn, N.Y.—*Artificial Lump Coal.*—June 27, 1865.—This composition consists of coal dust, gas, tar, or artificial asphaltum, and dead or heavy oil, mixed together and pressed into lumps.

Claim.—As a new article of manufacture, the artificial lump coal, consisting of coal dust, gas, tar, pitch, or artificial asphaltum, and dead or heavy oil, mixed by heat and stirring, and aggregated by pressure, as hereinbefore described.

No. 48,373.—R. P. COWLES, New Haven, Conn.—*Carriage Knob.*—June 27, 1865.—This invention consists in making a rose or bushing for carriage tacks, by first cutting out of thin metal, of the proper size, a disk, and then striking it up in dies, making a hole in the top and thrusting the common carriage tack into it.

Claim.—The herein-described knob, as a new article of manufacture.

No. 48,374.—F. W. COX, Brooklyn, N. Y.—*Pen and Pencil Case.*—June 27, 1865.—The object of this invention is to produce a pencil case which is capable of carrying a long lead, and to fetch the point in, and which is provided with a case to carry some reserve leads of the full length. When the pen is applied the reserve lead case is arranged by the same, and cannot be used for carrying leads.

Claim.—First, extending the longitudinally revolving revoking pencil tube *b* throughout the entire length of the case A, substantially as described, so that long leads can be inserted, and at the same time the tip can be fetched in.

Second, the circular groove *s* in the tube *b*, in combination with the pin *j*, substantially as herein set forth, so that sufficient hold for the said pin is obtained without the necessity of a cap over the tube *e*, and at the same time the pencil tube *b* is prevented from moving in a longitudinal direction.

Third, the collar *o*, applied in combination with the tube *f* and shell *h*, substantially as and for the purpose specified.

Fourth, the reserve lead chamber *p*, extending partially or wholly around the tube *b*, and from end to end of the shell *h*, as shown and described.

No. 48,375.—JOHN DANNER, Canton, Ohio.—*Washing Machine.*—June 27, 1865.—This invention consists in making washing machine rolls by covering a shaft or core piece with India-rubber rings, of cylindrical or other cross sectional areas or forms, so as to make a good rubbing surface.

Claim.—A roll or cylinder for washing machines, the perimeter of which is covered with India-rubber rings, so as to make a washing or rubbing surface, substantially as herein described and represented.

No. 48,376.—ALFRED DAWES, Waltham, Mass.—*Saw.*—June 27, 1865.—This invention consists in attaching a saw blade to its frame in such a manner that it can be turned in any direction desired, and tightened or loosened at pleasure.

Claim.—Attaching a saw blade to and within its frame by means of the screw shafts *f* and *g*, handles *l l*, and thumb nuts *n*, or their equivalents, arranged and operating together substantially as herein described and for the purposes specified.

No. 48,377.—AUSTIN G. DAY, Seymour, Conn.—*Bungs for Barrels and other Vessels.*—June 27, 1865.—This invention consists of a bung fitted with a tube containing a valve, which is pressed against its seat by means of a spring, an aperture being made in the centre of the bung. This bung is intended for barrels and other vessels for holding petroleum and other volatile liquids.

Claim.—Providing, in the bung or stopper, or other part of a cask or other vessel for the transportation or storage of petroleum or other liquids in which vapors or gases are naturally generated, a valve which operates automatically, substantially as and for the purpose herein described.

No. 48,378.—NEHEMIAH DODGE, New York, N. Y.—*Deep Well Pump.*—June 27, 1865.—In this invention, a tube is made in sections, the lowest of which sections passes into that above it by a slip joint, being so shaped at the bottom as to admit the influx of liquids, and carrying a valve at the top, formed of a section of a sphere made concave on the under side, and being hinged by a pin passing through the periphery of the lowest section of the pipe, and confined to its place by the section next above, within which it is held.

Claim.—First, the slip joint of the lower part of the barrel, in combination with a hollow piston rod, made in the manner and for the purposes herein described.

Second, the making of the contact part of the valve and valve seat of the section of a sphere, in combination with the cylindrical concave of the under surface of said valve, substantially in the manner and for the purpose set forth.

Third, in combination with said valve, a hinge pin, substantially in the manner and for the purpose set forth, so that the bearing of the pin against the cylindrical concave of the pump shall hold it firmly in its place.

No. 48,379.—H. W. DOPP, Buffalo, N. Y.—*Hydro-Carbon Burner for Cooking and Heating.*—June 27, 1865.—In this invention, the oil is drawn up into a retort and vaporized, and thence led by a needle point, controlled by a suitable device, to a commingling tube into which air is admitted through an aperture, and hence passing up is burned on a perforated plate surrounding the retort. Vessels for cooking can be placed over the flame; and a convenient number of commingling tubes may lead to a like number of burners. A stopping box secures by a tight joint and connects the retort to a reservoir which holds water, to collect and absorb the residuum of the oil after vaporization and combustion; the water is drawn off by a faucet when desired, and a safety valve is attached to the water reservoir.

Claim.—First, the needle point A′, in combination with spindle A2, perforated plate C, crank pin, sliding block and slot, substantially as shown and described

Second, the commingling tube C, in combination with perforated plate C, arranged and operating substantially in the manner described.

Third, the mode of connecting the retort B with reservoir E, for the purpose described.

Fourth, the application of reservoir E, for the collection of the residue of hydro-carbon liquids.

Fifth, the use of water, or other liquid of suitable specific gravity, for the purpose described, but only in connection with hydro-carbon stoves for cooking and heating purposes.

Sixth, the safety valve *l*, for the purpose set forth.

Seventh, the draw-off faucet *g2*, in combination with reservoir E, for the purpose herein set forth.

Eighth, supplying vapor to two or more aero-vapor burners by a generating apparatus.

Ninth, the retort B, and feed tube F, when constructed as and for the purpose set forth.

Tenth, the use of a pipe or tube in connection with a chimney or other apertures for the removal of noxious gases obtained from hydro-carbon liquid, the product of combustion, as described and set forth.

No. 48,380.—H. W. DOPP, Buffalo, N. Y.—*Sad-Iron Heater.*—June 27, 1865.—In this invention the gas escaping from a tube commingles with air, and flows into a chamber in the sad iron, and is burned at the perforation in this chamber and inside the sad iron; air being communicated thereto through a slot in the top plate.

Claim.—The aero-gas burner B and B′1, as constructed and for the purpose described.

Also, the regulating screw A1, in combination with commingling tube B1, substantially as and for the purpose described.

Also, the slot, or its equivalent, in the upper part of said iron, for the purpose set forth.

No. 48,381.—JAMES DOWD, Boston, Mass.—*Wagon.*—June 27, 1865.—One of the rocker plates is provided with a pivot which enters a socket in the other rocker plate. The transom bolt passes down through this pivot; around the pivot in the lower rocker plate is formed an annular channel for the reception of a lubricant. The wagon body is supported upon semi-elliptic springs fastened at their centres to each axle. One end of each spring is jointed to the wagon body in the usual manner; the other end is attached to a bar which slides to any desired extent in ways fastened to the bottom of the wagon.

Claim.—The combination of the oil-holding channel *f*, with the tubular pivot *d*, and step *e*, applied to the rocker plates, and the transom bolt, as specified.

Also, the combination of the slider L, with the spring and wagon body or truck, in manner and so as to operate substantially as described.

Also, the combination and arrangement of the auxiliary or tie bars *c c*, with the truck F, and the springs H H, and their sliders I I, applied thereto substantially as explained.

No. 48,382.—SPENCER B. DRIGGS, New York, N. Y.—*Mode of Reclaiming Marsh and Swamp.*—June 27, 1865.—This invention consists in forming a continuous wall of iron plates, with water-tight joints, sufficiently high to shut out the tide at ordinary flood. Also, in making a ditch within said wall, deeper than the bottom of the iron plates, to take up the ooze or leach through the ground under the plates.

Claim.—The construction of a wall impervious to water, for the reclamation of swamp or marsh lands on the shores or banks of the sea, bays, lakes, rivers, creeks, or other waters, by the insertion into the ground, at a suitable distance from the margin of the shore or bank, of a series of iron plates, with water-tight joints, extending to a suitable height above the surface of the ground, to shut out the ordinary tidal or other flood, substantially as herein specified.

No. 48,383.—GEORGE DUNHAM, Unionville, Conn.—*Nut Machine.*—June 27, 1865.—This invention consists in a combination of several devices for making nuts, and will be understood by reference to the claim and engraving.

Claim.—First, the sliding plate *o*, operated by the plate *d*, with its inclined edges, for gauging the width of the bar just before the blank is cut therefrom, substantially as described.

Second, the combination of the conical shaped recess Q, with the spring or yielding table P, substantially as and for the purpose described.

Third, the employment of the lifting holders S S′, substantially in the manner and for the purpose described.

Fourth, the clearer bar N, for holding, clearing, and carrying the nut from one point to another, substantially as described.

Fifth, forming a screw upon the upper end of the punch *k*, in combination with the threaded socket *i*, substantially as described.

No. 48,384.—ROBERT DUNLAP, New York, N. Y.—*Hat.*—June 27, 1865.—This invention will be understood by reference to the claim.

Claim.—As a new article of manufacture, a head covering with its sides made of two thicknesses of woven or knitted material, formed upon a block and cemented together with gutta percha or India-rubber by the aid of wet heat, as herein specified.

No. 48,385.—GEORGE DURYEE, New York, N. Y.—*Manufacture of Printers' Ink.*—June 27, 1865.—This ink is composed of one hundred pounds of the dark-colored residuum resulting from the distillation of petroleum, to which is added twenty-five pounds of the waste sulphuric acid which has been used in deodorizing petroleum. This compound is agitated until it becomes thick, tenacious, and nearly black. Water is then added to wash out the acid, and if necessary chloride of lime to neutralize and destroy any unpleasant odor. The resulting substance is called petroline wax, which is substituted for linseed or other oils in the manufacture of printers' ink.

Claim.—First, the improved ink prepared of the materials and in the manner substantially as herein set forth and described.

Second, as a basis for the manufacture of various kinds of printers' ink the material derived from the residuum of petroleum, and herein designated as petroline wax the same to be used substantially as set forth.

No. 48,386.—JOSEPH ENDERS, Louisville, Ky.—*Carriage Top.*—June 27, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—First, the pillars E, and open rings F, or their equivalents, formed by the rear ends of the rail B, in combination with braces I, lazy back D and top C, constructed and operating substantially as and for the purpose set forth.

Second, the hooks *d*, and catches *e*, in combination with the rail B, and straps J, secured to the seat A, substantially as and for the purpose specified.

No. 48,387.—VALENTINE FELKNER, Cannel, Me.—*Plough.*—June 27, 1865.—This invention consists in connecting any common plough with an ordinary wheel in a peculiar manner, whereby the plough is held and guided in the furrow; also, in a peculiar device for governing the depth of the furrow, and in a combination of two or more ploughs in gangs, held and governed by these devices.

Claim.—Elbow C, upright D, and level elbow *b*, combined and arranged to operate substantially as and for the purpose set forth.

Also, rod G, lever H, truck *g* and adjustable collar *j*, when arranged and combined to operate substantially as described, whereby the depth of the furrow is not only controlled, but the direction of movement of the truck *g* always corresponds to the line of draught.

Also, the arrangement of the plough holder, as constructed of parts C D B and *b*, attached to plough A, with plough governor G H *g* and *j*, operating as described and for the purposes set forth.

Also, the combination of two ploughs in one gang, when combined and arranged to operate substantially as and for the purposes specified.

No. 48,388.—W. A. FISHER, Lower Merion, Penn.—*Boring Artesian Wells.*—June 27, 1865.—This invention consists of a drill composed of three detachable sections; a central one, the lower end of which is reduced to a straight cutting edge; and two side ones, presenting sharp curved edges, bevelled on their inner sides. Also, of a device for giving an upward driving motion to the upper end of the drill stock, to disengage the drill when it becomes wedged fast in the well.

Claim.—First, the drill B, composed of two or more detachable sections, each having a cutting edge, and the whole being arranged and secured together by the within described devices, or their equivalents, substantially as and for the purposes specified.

Second, a drill, with a central straight-cutting edge *x*, and a curved cutting edge *y*, at each side of the same, arranged in respect to each other as described.

Third, the tube D, combined with the casing A, drill B, and its valve, substantially as and for the purpose specified.

Fourth, the case A, its cross-piece F, and drill B, in combination with the sliding rod F, and its plate *h*, all being arranged and operating substantially as and for the purpose described.

No. 48,389.—SAMUEL WARD FRANCIS, New York, N. Y.—*Postage and Revenue Stamp.*—June 27, 1865.—The nature of this invention is defined by the claim.

Claim.—Incorporating with or applying on to stamps, either before or partially before and partially after being used, ingredients such as will chemically combine to produce a dark color or stain under the action of moisture, substantially as and for the purpose set forth.

No. 48,390.—WILLIAM and JOHN GROVES, Providence, R. I.—*Puddling Furnaces.*—June 27, 1865.—This invention consists in the use of two fire chambers, arranged on opposite sides of the body of the furnace, with a flue directly over the same midway between the two fires.

Claim.—The employment or use of fire chambers on opposite sides of the body of the furnace, substantially as specified.

No. 48,391.—FREDERICK HAINSWORTH, Chicago, Ill.—*Apparatus for Carburetting Air.*—June 27, 1865.—This invention consists of a carburetter communicating with a reservoir by means of a tube, and also with a blower by means of a tube. The pipe connecting the reservoir is provided with a stop-cock, which is provided with apertures, by means of which the flow of naphtha may be regulated. The inside of the carburetter is provided with a series of semicircular partitions, made of fibrous material.

Claim.—First, the combination and arrangement of the regulating cock M, provided with a diagonal series of perforations *c*, with the dial and pointer, as and for the purposes herein specified and shown.

Second, the peculiar arrangement of the vertical porous partitions B, with the ducts *b*, leading from the pipe C, operating as specified and described.

Third, in combination with the carburetter A, the employment of the fan H, and regulating cock M, with the dial and pointer, arranged and operating as described.

No. 48,392.—CALEB C. HAND, Cincinnati, Ohio.—*Broom Head.*—June 27, 1865.—This invention consists in the combination of the parts of a metallic broom head, referred to in the claim and shown in the engraving.

Claim.—The parts A B E F G H J and K, in the described combination, for the purpose set forth.

No. 48,393.—CHARLES THOMPSON HARVEY, New York, N. Y.—*Sleeping Car.*—June 27, 1865.—This invention consists in the construction of sleeping cars, so that the berths are supported by adjustable standards, entering into fixed sockets above and below; the upper one being of sufficient length to receive the berths and retain them in position, out of the way of occupants of the seats; said berths resting on springs, around or within the adjustable supports; also in the mode of ventilating the berths, and providing curtains to screen the occupants from observation.

Claim.—First, the adjustable standards D, whether solid or hollow, either surrounded by, or, if hollow, enclosing within, spiral or other form of springs, combined with the berth of a sleeping car, in the manner and for the purpose herein set forth.

Second, the combination of the air tube G, tube *h*, flexible tubes H, and air valves I, when used in connection with the berth of a sleeping car, for the purpose of ventilation, in the manner and for the purposes herein described.

Third, suspending and nesting the berths upon the upper sockets, or upon the parts which constitute the upper portions of the standard of the berths when the berths are out of use, substantially as described.

Fourth, supporting the berths upon adjustable elastic bearings, when in use as shown at D, in Fig. 2, substantially as described.

Fifth, preventing and controlling violent oscillations and noise from the movements of the berths on their standards and sockets by means of elastic diaphragms or rings, when combined with the bottom of the berth, substantially as described.

Sixth, applying elastic curtains to adjacent berths, so that the same will yield and conform to the motion of the supporting springs thereof, so as to isolate the berths from the common passage way and from each other, substantially as described.

No. 48,394.—MATTHEW HASTINGS, Philadelphia, Penn.—*Gold Beating Machine.*—June 27, 1865.—This invention consists in an upright frame, supporting a driving shaft in the same manner as in many other drop hammers. On this shaft is mounted a cam or wheel, having nearly one-half of its periphery cut away. In a rocking frame, pivoted to the back of the main frame, in rear of and operated by a pinion on the driving shaft, is another shaft having a similar wheel, the two full peripheries of which, when in motion, clamp the vertical rod or handle of the hammer between them, and raise it until their revolution presents the shorter radius of the cut-away portion, and then releasing their hold on the handle, and allowing the hammer to descend.

Claim.—First, the employment for beating gold of a vertically guided hammer which is raised and permitted to fall with uniform face by the mechanism herein described, or the equivalent to the same.

Second, the shaft K, with its arms L, the rock frame H, and cam *f'*, the whole being arranged for joint action on the rod F, substantially as and for the purpose herein set forth.

No. 48,395.—JONATHAN HATCH, South Windham, Conn.—*Machine for Cutting Paper into Sheets.*—June 27, 1865.—In this invention an intermitting movement of the feed roll is attained, and the paper from the roll is cut between the movements.

Claim.—The crank L, slotted lever E, slide D, band C, clutch A3, pulley A4, lever H, and cam F, in combination with each other, and with the feed rolls of a paper-cutting machine, substantially as and for the purpose herein specified.

No. 48,396.—THOMAS HAWKS, Rochester, N. Y.—*Manufacture of Malt Sirup.*—June 27, 1865.—The malt, prepared from barley in the ordinary manner, is ground and placed in a mash tun with a perforated false bottom, and water at a temperature of 175° to 180° is admitted and allowed to rise through the perforated bottom. Corn meal is then added, and thoroughly mixed by stirring, after which the whole is allowed to stand; the liquor is then drawn off, and water at 200° added, and allowed to remain for two hours. This may be repeated as often as necessary; the liquor is then purified and evaporated in a vacuum to the proper consistency.

Claim.—The method and process of producing a sirup of sugar from malt and meal of Indian corn, substantially as herein described.

Also, as a new product a sirup of sugar produced from malt and the meal of Indian corn without any separation of the fecula thereof, substantially as set forth.

No. 48,397.—SAMUEL HEATON, Kingston, Iowa.—*Sorghum Evaporator.*—June 27, 1865.—This invention consists of a furnace, over which is placed an evaporating pan: the pan is supported by arms attached to a cross-bar, resting upon two bars: these latter bars are supported by upright posts; one end of each bar rests in a notch in the upright posts, and may be raised and supported by hooks; the object being to move the pan on or off the fire as required.

Claim.—First, the levers E E, constructed in the manner and for the purposes specified, substantially as set forth.

Second, the cross-bar D, constructed in the manner and for the purposes specified, substantially as described.

Third, the swinging hooks *g g*, constructed in the manner and for the purposes specified, substantially as described.

Fourth, in combination with an evaporator, the levers E E, the cross-bars D, and the hooks *g g*, constructed and operated substantially as and for the purposes herein specified.

No. 48,398.—LUDWIG HELD, Harlem, N. Y.—*Composition for Lining Barrels.*—June 27, 1865.—This invention consists of a composition of clay, silicic acid, potash, sulphate of soda, coal or carbon, and carbonate of lime.

Claim.—First, the within described composition, when the same is applied in combination with carbonate of lime, substantially as and for the purpose set forth.

Second, the within described composition, when applied in combination with carbonate of lime and graphite brown spar, copperas, or other material containing iron, particularly as a lining for barrels or other vessels.

No. 48,399.—ROBERT HEMINGRAY, Cincinnati, Ohio.—*Fruit Jar.*—June 27, 1865.—This invention consists in forming upon the neck of a jar two shoulders on opposite sides, the

object of which is to afford support for a clamp passing over the cover of the jar, and down under the shoulders. The direction of the shoulders around the neck is spiral, so that in rotating the clamp, it is compressed upon the rim. The shoulders run out so as to leave openings upon the neck for the adjustment of the clamp.

Claim.—The peculiar form of the neck of the jar from the spiral shoulders gradually contracting to the top, as herein shown and described.

No. 48,400.—GIBBONS G. HICKMAN, Downington, Penn.—*Railroad Frog.*—June 27, 1865.—This invention consists in so constructing and applying the movable part of a railroad frog, that it is made capable of returning to its normal position by the force of gravitation, after it has been moved by the car-wheels; and locked or retained in its closed or normal position by the weight of the wheels, when the latter are running thereon.

Claim.—The rail B, applied and secured in such a manner as to be caused to assume its normal position by the influence of gravity after it has been moved by the wheels of a passing train, and also adapted to be retained in position by the pressure of the wheels when the latter are running upon it, substantially as herein described and represented.

No. 48,401.—BENJAMIN S. HILL, New York, N. Y.—*Pump.*—June 27, 1865.—This pump consists of three cylinders arranged concentrically, the second enlarging into a hollow piston at its lower end, the third and innermost constituting a hollow piston-rod, and being rigidly attached to a diaphragm a little above the piston. Above this diaphragm, between the hollow rod and second cylinder, is a perfectly closed air space; below the diaphragm are openings in the second cylinder through which the access of water received from below passes, to fill the space between the outer and second cylinder, as the piston descends, and again to pass upward through the hollow rod as the cylinder ascends, the only valves being one at the bottom of the pump-barrel, and one on the under disk of the piston.

Claim.—First, the cylinder having openings *f f*, combined wtih the piston P, and arranged in relation to the discharge pipe H, substantially as and for the purpose herein specified.

Second, combining the discharge-pipe H with the piston by means of the cap G of the cylinder C, and the pipe F, the latter pipe serving also as a means of securing the cap G tightly to the cylinder C, and of forming an air-tight chamber *e* within the said cylinder, all substantially as herein specified.

Third, the combination and arrangement of the piston P, cylinder C, chamber E, and discharge-pipe H, substantially as herein specified.

No. 48,402.—W. R. HILL, Detroit, Mich.—*Washing Machine.*—June 27, 1865.—This invention consists in securing to the bottom and centre of an ordinary washtub a stud, into which a centre post is secured by a screw, the lower disk or rubber being placed between the stud and post, and kept in place by a shoulder, the lower disk having perforations through it, and cleats so that it does not come in contact with the bottom of the tub.

Claim.—First, the lower disk, fastened and constructed as described, and acting as a washboard and a filter.

Second, the combinatiom of the central part, stepped into the stud as described, and having the two shoulders which act respectively upon the washboard disk and the rubber disk, to maintain them in their relative position.

No. 48,403.—EDWARD F. HOLLOWAY, Kingston, Ind.—*Straw Cutter.*—June 27, 1865.—In this invention the fly-wheel that carries the knife has its shaft provided with a coiled spring, to keep the knife pressed closely to the mouth of the box.

Claim.—The combination and arrangement of the knife F, shaft C, coiled spring S, collar I, metal front B, box A, fly-wheel G, and guard P, substantially as shown and described.

No. 48,404.—BENJAMIN HOWARD, New York, N. Y.—*Ambulance.*—June 27, 1865.—This invention consists in placing within the body of an ordinary ambulance, a slight distance above the floor, a wooden frame somewhat less in width than the ambulance, and which is provided with a number of transverse removable seats, and with a series of rollers, parallel to the seats and flush with the upper surface of the frame. Upon these rollers can be slid, when desired, two litters, which, when in position, lie side by side, and cover the seats. The frame is provided with four stanchions which rest upon counterpoise springs upon the floor of the vehicle; counterpoise springs are also interposed between the sides of the frame and vehicle, and by this means it is claimed all vertical and lateral motion is taken up. Underneath the vehicle is a compartment in which the litters are placed when not in use.

Claim.—The combination of transverse seats and sliding litters or beds resting on a frame placed within the body of the vehicle, supported and balanced by counterpoise springs within the body of the vehicle. This, together with the compartment for the beds beneath the main floor of the body of the vehicle, in which the litters or beds may be placed for convenience, when not in use, as in the manner described above.

No. 48,405.—A. C. HOWELL, Vienna, N. J.—*Beverage.*—June 27, 1865.—This invention consists of a composition of bicarbonate of soda, water, white sugar, the white of four eggs,

a table-spoonful of wheat flour, and any flavoring that may be desired. When the composition is to be used a small quantity of tartaric acid is dissolved in water, in a suitable vessel, and one or two table-spoonfuls of the composition added, and the vessel filled up with cold water.

Claim.—The drink composed of the materials, and prepared in the manner substantially as herein described.

No. 48,406.—DUANE HULL, Newburg, N. Y.—*Extracting Turpentine and other Products from Resinous Wood.*—June 27, 1865.—This invention consists in effecting the distillation of wood at a pressure less than that of the atmosphere. The wood is placed in a retort or still, and heat is applied; the air is then withdrawn from the retort by means of an air-pump, or other suitable device.

Claim.—The distillation of pine or other resinous wood, for the purpose of obtaining spirits of turpentine or other products, under reduced pressure, or pressure less than the atmosphere, substantially as herein set forth and described.

No. 48,407.—NATHANIEL JENKINS, Boston, Mass.—*Self-closing Cock.*—June 27, 1865.—In this invention the valve opens downward against a spring which has sufficient power to close the valve against the pressure of a step screw thread on the follower within the cap. The valve seat is in a line with the centre of the horizontal induction pipe, and the fluid passes upward when the valve is depressed, and thence ascends through the nozzle. The follower is in sections, the lower section having the valve attached to it and entering the main or upper section which is hollow to receive it, and being suspended and centred by means of a flexible diaphragm.

Claim.—First, the screw-follower H, in combination with the valve of a self-closing faucet, substantially as set forth and for the purpose described.

Second, the combination of the swivel P, screw-follower H, valve K, and spring O, substantially as and for the purpose described.

No. 48,408.—ROYAL E. HOUSE, Binghamton, N.Y.—*Electro-phonetic Telegraph.*—June 27, 1865; patented in England July 21, 1864.—This invention consists in using as a register a magnetic needle, the deflections in which produce sounds by striking against rods connected to a bell; these sounds are intensified by a sound-condenser surrounding the bell. It also consists in certain peculiarities in the suspension of the needle by which its torsion is regulated; in certain improvements in the constructiou of magnetic helices; in the arrangement of an adjuster in connection with the main line, by which the amount of electricity passing through the helix is regulated; and in a decrease in the size of the helices towards the centre of the line proportionate to their distances from its ends.

Claim.—First, in combination, a magnetized needle or helix, and an adjustable torsion suspension apparatus existing both above and below the needle, the combination being substantially such as is described.

Second, the combination with a magnetized needle suspended by torsion wire or thread limiters for limiting its motion, and which give sounds when struck by the needle, the combination being substantially such as described, and in combination with these, a gong or bell, substantially as specified.

Third, in combination with a torsion suspended magnetized needle, a knife edge applied to the needle, and acting substantially as set forth, and also, in combination with a magnetized needle, a knife edge and limiters, arranged with reference to the needle, substantially as described.

Fourth, a suspension torsion apparatus, consisting of wires or threads attached to collars or rings, as described, in combination with a magnetized needle supported in the collars, substantially as described, and also a magnetized needle in combination with a torsion suspensory apparatus, both ends of which can be adjusted as set forth; and also a magnetized needle, in combination with a torsion suspension apparatus, both ends of which can be adjusted at once by reason of being geared together, both these combinations being substantially as set forth; and also, in combination with a magnetized needle, an adjustable torsion suspensory apparatus extending both above and below the needle, and having one thread or wire attached to a weight, substantially as described, so as to compensate for the varying length of the wire.

Fifth, a magnetized needle, in combination with limiters, and a gong or bell, and concentrating cone, and in combination with these an outer cone, all these parts being substantiafly such as set forth; and also a sounding apparatus consisting of a bell and a truncated concentrated cone, arranged with reference to each other as described, and, in combination with such an apparatus, an outer concentrating cone, arranged with reference to a ball and interior cone, as described.

Sixth, sections of a helix, composed of members connected to and insulated from each other, substantially as set forth.

Seventh, a helix made up of sections of varying diameter, insulated from each other as described.

Eighth, a helix made up of sections connected to and insulated from each other as set forth

Ninth, a helix made up of sections composed of members when both the members and th e sections are connected to and insulated from each other, substantially as set forth.

Tenth, a helix made of decreasing area to the ends. as described, and also a divided helix or helix made in two parts, so that one part may readily be moved away from the other, and also a divided helix, in combination with a divided case, all substantially as specified.

Eleventh, apparatus substantially such as is described, for registering the power or force of reaction, in combination with a telegraph line and a signalizer, whereby the locality of excessive leakage may be determined as described.

Twelfth, a helix making part of a signalizer, in combination with branch lines and ends of a main line, capable of being advanced toward and drawn away from each other, the combination being as described.

Thirteenth, a helix making part of a signalizer, in combination with branch lines and ends of a main line, capable of being operated as described, and with tubes containing liquid, as described, whereby varying amounts of currents of electricity may be caused to pass through a helix, substantially in the manner and for the purposes specified.

Fourteenth, in combination a helix making part of a signalizer, branch lines or conducting wire, an electric adjuster located between the points where the branch wires are connected to the main wire, and a key or circuit breaker also located between the points where the branch wires are connected to the main line, and operating when open to send the whole current through the helix.

Fifteenth, a helix making part of a signalizer and united to a main line by branch lines or wires, substantially as described, in combination with an electric adjuster in connection with or making part of a main line, and located between the points where the branch lines are connected with the main line, as described, whereby the relative proportions of electricity passing through the adjuster and the helix may be governed and regulated as described.

Sixteenth, a helix of a signalizer, in combination with a line, by means of a tube and adjustable severed wire, as described, when the wire is provided with a register or index as set forth, whereby the condition of a helix or of the batteries that work the line may be tested in the manner specified.

Seventeenth, an apparatus substantially such as is described, whereby the apparatus for adjusting torsion, and the apparatus for adjusting the relative position of the ends of a main line, may be put in operation at the same time, substantially as set forth.

Eighteenth, in combination with a line, a series of helices differing in size at each station thereof, and proportioned each to the other in proportion to the length of line between each helix and the most distant extremity thereof, the combination being substantially as set forth.

Nineteenth, the new telegraphic signalizer herein described, composed of a helix, a torsion, suspended magnetized needle, limiters, and a bell and concentrating apparatus, all substantially such as hereinbefore specified.

Twentieth, in combination with a helix making part of a signalizer, and connected to a line by branch wires, a key or commutator, located in the line and capable of breaking the current through both the main line and the branch wires, the combination being substantially such as described.

And finally, in combination with an ordinary protector, such as is described, applied to the ordinary wire of a line, a protector, such as is specified, applied to a fine wire inserted in and making part of the main line, for the purposes specified.

No. 48,409.—H. K. JONES, Kensington, Conn.—*Lathe for Turning Tool Handles.*—June 27, 1865.—This invention consists in placing the blanks into an adjustable V-shaped crotch, where they are held until two revolving heads, with centres and revolving driving dogs, come to the point, where one of them is driven forward by coming in contact with a revolving cam which centres the blank at one end and forces it on to the revolving driving dog, the crotch travelling with the heads until the blank is securely held by a spring and pawl on a rack on the centre, when it is released and falls back to recive the next blank. The revolving heads carry the blanks forward to a series of stationary knives which give shape to the handle.

Claim.—First, the spindle *f* provided with spurs, and arranged in a revolving head *b e*, and operating, in combination with the longitudinally sliding centres *k*, in the revolving drum E, substantially as and for the purpose set forth.

Second, giving to the spur centres a sun and planet motion by means substantially such as herein described, for the purpose set forth.

Third, giving to the centres *k* an automatic reciprocating motion by means of a spring and cam or other equivalent means, substantially as and for the purpose specified.

Fourth, the pins *t* and hook *s* applied in combination with the trough F and centres *k*, substantially in the manner and for the purpose described.

Fifth, the use of stationary cutters G I in combination with the centres *f k*, arranged in revolving heads, substantially as and for the purpose set forth.

No. 48,410.—J. O. JONES, Boston, Mass.—*Carpet Fastener.*—June 27, 1865.—This invention consists in the application to the floor of an eccentric or curved plate and its supporting frame, by means of which a carpet may be securely attached to the floor, while at the same time it may be easily and expeditiously removed.

Claim.—The application and arrangement of the above-described apparatus, substantially in manner and to operate as before described.

No. 48,411.—ANTHONY KIPP, Brooklyn, N. Y.—*Tea Kettle.*—June 27, 1865.—This invention consists in making the lower part of tea kettles, including the spout, of copper, and the rest of tin.

Claim.—The tea kettle above described, the lower half of the kettle, including the spout, being made of copper, and the upper part above the spout and line C being made of tin, as a new article of manufacture.

No. 48,412.—ALBERT KOMP, New York, N. Y.—*Hat Frame.*—June 27, 1865.—This invention is fully described by the claim.

Claim.—A hat frame, composed of a series of arched stays B, radiating from a common centre and fastened to a ring A, substantially as set forth.

No. 48,413.—ERNST J. KRAUSE, Lancaster, Penn.—*Process for Making Beer.*—June 27, 1865.—This invention consists in treating the malt in a mash tun with water at 178° for one hour, and then adding to it a second quantity of water at 180° in half the proportion of the first quantity. The whole is then allowed to stand for one hour and a half, after which a portion of the liquor in the tun is drawn off, and water, at 182°, added; a proper quantity of hops is then added, and the whole is boiled for one hour, after which it is treated in the ordinary manner.

Claim.—The mode of manipulating or process for making bottom fermenting beer, as herein set forth and distinctly specified.

No. 48,414.—ISAAC J. LANCASTER, Vancouver, W. T.—*Hoisting and Lowering Apparatus.*—June 27, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—The employment, in connection with a ratchet wheel and windlass, of pawls D D′, springs G G′ *d*, a retainer H, and lever E, the whole being arranged and operating substantially in the manner and for the purpose set forth.

No. 48,415.—JOSEPH H. LITTLEFIELD, Cambridge, Mass.—*Breeching Hook.*—June 27, 1865.—This invention consists of an inclined standard attached to the thill as a support for the breeching when under strain; a hook running over and beyond the standard and resting upon the thill at any required distance in front of the standard, which hook is pivoted at i s rear end so as to be capable of an upward motion in order to allow the breeching to be slipped under it, and is also provided with a spiral spring at its rear end, whose function it is to keep the end of the hook in contact with the thill. In the hook just at the end of the standard is a recess, into which fits an upward-projecting tongue on the end of the standard, in order that, when the hook is raised up, there may be no opening by which the breeching might slip between the hook and standard.

Claim.—The hook A with its swell D and slot I, the standard B, with its tongue or continuation C and the spring F, all constructed, arranged, and combined substantially as described and for the purposes set forth.

No. 48,416.—JOSEPH H. LITTLEFIELD, Cambridge, Mass.—*Whiffletree.*—June 27, 1865.—This whiffletree is intended to be a safety device, by means of which the horse, when beyond control, may be released from the carriage. This object is to be effected by making the hooks in the ends of the whiffletree rotatory, and securing them in such a manner that they may be released and then pulled round by the tugs far enough to allow the tugs to slip off. The releasing is effected by means of a cord running from the hooks in the ends of the tree longitudinally through the tree, coming out at its centre and passing within reach of the driver.

Claim.—The combination of the ferrule B, having its guard *h* and socket *k*, the hook C, having its lever *l*, spindle *j*, and pin *p*, the spring D and the cord and chain F and E, or their equivalent, all arranged substantially as described and for the purposes set forth.

No. 48,417.—THOMAS H. LOWERRE, New York, N. Y.—*Apparatus for Attaching Mourning Badge to Hat.*—June 27, 1865.—In this invention a series of pins pass through the hat from within, and through the prepared edges of the badge or weed, which is then sewed on by ordinary means. These pins are held in an iron frame inside the hat, which is held to one side thereof by an adjustable arm which abuts against the opposite side of the hat.

Claim.—The implement herein described for securing bombazine to hats.

No. 48,418.—J. W. MALOY, Boston, Mass.—*Valve Gear of Steam Engine.*—June 27, 1865; antedated June 9, 1865.—This invention consists in the use of an auxiliary engine so arranged that the piston rod thereof is attached to the lower extremity of the link which controls the motion of the valve of the principal engine. The governor, which is driven in the usual way, is attached directly to the valve stem of the auxiliary engine, by which means any change of speed causes its valve to be opened and the piston to be raised in the cylinder, and thus the link is carried up, and the amount of steam admitted to the main cylinder is diminished, when, as a consequence, the balls of the governor fall, and the steam is shut off from the small cylinder and the link falls, and the necessary amount of steam is again admitted to the principal engine.

Claim.—Actuating the link that forms the communication between the eccentric rod and sliding-valve rod by means of an auxiliary steam cylinder and piston when supplied with steam by the movement of the regulator rod, as set forth.

No. 48,419.—HENRY MARTIN, Springfield, Mass.—*Brick Machine.*—June 27, 1865.—This invention consists chiefly in a mechanism so constructed that the plunger can be regulated according to the thickness of the bricks to be made. The press boxes are provided with a slide, through which stones, &c., can be discharged from the press box. A pusher, serving to bring the moulds under the grate, is operated by a hand lever secured to a rock-shaft; by the action of a crank a shaft is put in motion, and by means of a crank-pin on two slotted levers, the motion of the central shaft is transmitted to the gate and plunger.

Claim.—First, the slotted levers *i*2 *l*2 and cog wheel *i t*, or their equivalents, in combination with the gate *f*, plunger *d*, mixing-box A and press-box C, constructed and operating substantially as and for the purpose set forth.

Second, the adjustable tapering slide *i*4, in combination with the lever *i*2, pins *i*3, or its equivalent, and plungers *d*, constructed and operating substantially as and for the purpose described.

Third, the rising and falling slide or gate *m*, in combination with the press-box C, constructed and operating substantially as and for the purpose specified.

Fourth, the pusher E, arms *f*, and rock-shaft *e*, in combination with the roller platform D and with the mould constructed and operating substantially as and for the purpose set forth.

No. 48,420.—MAURICE H. MATSINGER, Philadelphia, Penn.—*Bracket.*—June 27, 1865.—This bracket is formed from a bar or plate of metal, on one end of which is a socket, the axis of which is of the width of the plate, and the portion of which contiguous thereto is turned upwards edgeways, so that the axis of said socket is parallel with and above the edge of the main body of the plate. The inner end of this plate is twisted one-fourth round, and bent out of line sufficiently to give the staff a proper inclination, and is secured to the sill of the window by means of screws passing through it. A short distance from this inner end is attached another socket, the axis of which is in line with the outer one, and which sustains the inner end of the staff.

Claim.—The plate A with its sockets *c* and *c'*, the whole being constructed and adapted for the reception of a rod or staff, substantially as described.

No. 48,421.—JOHN MATTHEWS, jr., New York, N. Y.—*Faucet.*—June 27, 1865.—In this invention within the tube is a flexible lining which is compressed by a spring stopper at one point; pressing down this spring permits the flow of the liquid.

Claim.—First, in combination with a flexible lining tube C applied within the passage of a cock or faucet, a stopper, the operation of which is so controlled by a spring as to compress and close the said tube C automatically, substantially as herein specified.

Second, the combination of the flexible lining tube C, stopper D *d d e*, fixed diaphragm *a*, spring E and cap F, the whole applied in relation to each other and to a cock or faucet, to operate substantially as herein specified.

No. 48,422.—JOHN MATTHEWS, jr., New York, N. Y.—*Instrument for Opening Bottles.*—June 27, 1865.—This invention consists of a metallic cap, to which are attached clips which pass over the neck of the bottle and fasten in the recess around the neck. The cap has a tube of hard rubber, or similar material, of such size as to fit loosely in the neck of the bottle attached to it. A packing ring is attached to the instrument to prevent the liquid from escaping between the neck of the bottle and the metallic cap.

Claim.—First, an instrument for opening and holding open the inwardly closing stopper of a bottle, consisting of an internally operating device for pressing back the stopper from its seat, and an attached externally operating means of holding the said internally operating device in position to keep the stopper open, substantially as and for the purpose herein specified.

Second, the combination of the collar A, tube or hollow hub C, elastic packing ring D, and spring clasps or clips B B, substantially as and for the purpose herein specified.

No. 48,423.—EDWARD MAYNARD, Washington, D. C.—*Breech-loading Fire-arm.*—June 27, 1865.—This invention consists in the combination of a retaining spring with the plunger, in the hinged block of a breech-loading fire-arm, when the said spring is contained in a hole extending from the under side of the breech block to the aperture in which the plungers work.

Claim.—The combination of the retaining spring S, with the plunger B, in the hinged block of a breech-loading musket or other fire-arm, when the said spring is contained in a hole extending from the under side of the breech block to the aperture in which the plungers work, substantially in the manner and for the purpose herein set forth.

No. 48,424.—JOSIAH F. MELCHER, Bloomington, Ill.—*Washing Machine.*—June 27, 1865.—This invention relates to a means used to cause a flow of water toward the plunger, during the act of forcing it up to its work, so that the water will be thrown upon and through the clothes during the act of pressing them against the washboard.

Claim.—First, forcing a stream of water through or upon the articles to be washed, simultaneously with the operation of the plunger, and in a contrary direction to the movement of the plunger, by means substantially as described.

Second, the valves *b h*, and chamber D, in combination with a perforated washboard C, and a plunger G, substantially as deseribed.

Third, the combination of a reciprocating plunger G, a water passage D, and a perforated washboard C, substantially as described.

No. 48,425.—JAMES MILLER, St. Louis, Mo.—*Grate.*—June 27, 1865.—In this invention the bars in the back of the fire pot are hollow, and communicate with chambers at either side of the grate; from these chambers and in adjacent flues pipes conduct the heat to upper chambers.

Claim.—The combination and arrangement of the horizontal tubular or hollow grate bars *b b*, with the lateral chambers A A, substantially in the manner and for the purpose herein set forth.

No. 48,426.—ALEXANDER NADOW, Springfield, Mass.—*Automatic Stop Motion for Steam Engines*—June 27, 1865.—This invention consists in placing on and combining with the fly-wheel a sliding bar placed in a socket, with a spring acting upon it in such a way that in the event of any considerable increase in the motion of the wheel, the centrifugal force will cause this bar to protrude so far from its socket as to come in contact with the arm of a lever placed near it, and which in turn acts upon a sliding rod to the opposite end of which is a dog, which engages with the ratchet wheel placed upon the valve spindle, and which keeps the valve open while the engine is running at its proper rate of speed. On the same valve spindle, and outside of the ratchet wheel, is another wheel over which a cord or belt passes, which has a weight attached to it so that as the dog is disengaged from the ratchet wheel the weight falls, and by the action of the cord closes the valve, and thus prevents injurious increase of speed in the engine.

Claim.—The rod *b*, in combination with the fly wheel A, and suitable mechanism for closing the valve, substantially as described.

No. 48,427.—C. A. NEUHAUS, New York, N. Y.—*Bungs for Barrels.*—June 27, 1865.—This invention consists of a plug, provided with a valve which is pressed against its seat by means of a spiral spring. A lever set in a mortise is provided with a knuckle which rests on the head attached to a rod, and by depressing the end of the lever the valve may be opened.

Claim.—A bung provided with a tubular plug *c*, spring valve *d*, and lever B, substantially as and for the purpose set forth.

No. 48,428.—G. H. OBER, Newburg, Ohio.—*Wood Turning Lathes.*—June 27, 1865.—The object of this invention is to turn irregular forms, and it consists of a vibrating frame, with gear arranged in the frame to give the motion to the pattern, and the stock, with a sliding carriage, operated by a worm wheel and rack.

Claim.—First, the rack L, stop r', and shaft E, in combination with the lever *r*, catch *j*, screw g', and adjustable carriage G or H, substantially as and for the purpose set forth.

Second, the special arrangement of the spring I, clutch c', and shifter T, in combination with the shaft E, and adjustable carriages G or H, as herein described, for the purposes set forth.

No. 48,429.—JOHN H. O'NEIL, Pittsburg, Pa.—*Ash Sifter.*—June 27, 1865.—In this invention a sifter is made from a single piece of wire cloth, bent up on three sides to a pan shape, and fastened to a piece of stout wire which forms the rim; it is provided with feet, and a handle made of strong wire, and is intended to be placed in the ash pit of stoves.

Claim.—As an improved article of manufacture, the ash sifter constructed with its entire side and bottom of wire cloth, and provided with feet *b b b*, and handle *c*, all as herein described, and for the purposes set forth.

No. 48,430.—F. S. PEASE, Buffalo, N. Y.—*Three Way Cock.*—June 27, 1865.—In this invention the plug has a single transverse channel; when the direction of this is vertical the flow is direct through the delivery pipe, but when oblique or horizontal the flow is into an auxiliary tube, which curves upward and then enters the delivery pipe.

Claim.—The rotary valve K, with the through port M, rotating in a casing provided with parts which connect on one side with the chamber of condensed air A, with the vacuum chamber A, and with the exhaust opening E, and on the other side with corresponding opposite ports, which connect with the well pipe I, all substantially as and for the purpose described.

No. 48,431.—JOHN PEACE, Camden, N. J.—*Gas Fitter's Clamp.*—June 27, 1865.—This invention consists in two clips or supplementary jaws, each of which passes over one of the jaws of an ordinary vise. The contiguous faces of these clips are each furnished with a block of iron pivoted thereto in the centre, and of such a thickness that two semi-circular

transverse grooves, crossing each other at right angles, can be made in the faces of each. These grooves are of different sizes, and form the openings in which the different sized pipes or tubes are held while being cut.

Claim.—As an improved article of manufacture, a gas fitter's clamp, made substantially as herein shown and described.

No. 48,432.—Warden P. Penn, Jacob Geiss, and Jacob Brosins, Belleville, Ind.—*Grain Drill.*—June 27, 1865.—This drill is provided with a reciprocating agitator, of peculiar form, for the purpose of insuring a free flow of seed from the hopper. One of the regulating slides at the bottom of the seed box is connected with an oscillating bar, and the teeth through which the seed are dropped are also attached to the same bar in such a manner that by a single movement of a lever the flow of seed from the hopper can be entirely cut off, and at the same time the teeth elevated clear from the ground. A pendant, and if necessary an adjustable support to the frame of the machine is added for the purpose of supporting a man behind the hopper to attend to the machine.

Claim.—First, the arrangement consisting of the slide C, fixed plates *d*, with check pieces *c*2, and movable plates *d*1 *b*2, in combination with the hopper, all constructed and arranged in the manner and for the purpose described.

Second, the construction of the agitating slide with doubled bevelled projections *e' e'* and clearing pins *e*2, in combination with the divisions *a a*, vibrating hangers D3, and seed-distributing devices shown, substantially as and for the purposes set forth.

Third, the long cut-off plate *d*2 arranged with the plates *d d'* and slide C, and connected with the drill teeth by means of the pivoted vibrating bar E and chains *g*, and operated by a handle E, all in the manner and for the purpose described.

Fourth, the slotted hinge braces *h* applied to the drill tooth G and its bar H, in the manner and for the purpose described.

Fifth, the pendent stand board J, arranged substantially as described, upon a seed drill, for the purpose set forth.

No. 48,433.—W. B. Porter, Farmer City, Mo.—*Seed Drill.*—June 27, 1865.—This invention consists in the employment of rollers in front and rear of the machine, the front rollers being placed between furrow openers for the purpose of crushing the clods of earth that arise from the openers. The roller in the rear has for its object, being bevelled off at its edges, the pressing of the seed in the ground after it is delivered from the seed box down through the openers.

Claim.—The combination with the furrow openers G and wheels H, provided with bevelled edges, of the rollers D, substantially as and for the purposes herein described.

No. 48,434.—Thomas H. Powers, Milwaukee, Wis.—*Broom Head.*—June 27, 1865.—This invention consists in forming the open end of the conical socket which holds the broom corn with a flange-shaped edge, whereby a closer joint is made with the broom inserted; also in the use of a D-shaped nut having its edges notched, for the purpose of giving it a more firm hold of the broom.

Claim.—Forming the edge of the conical or other suitable socket plate, in and by which the upper portion of the broom corn is held, of a flange shape, substantially as herein described and for the purpose specified.

Also, the D-shaped nut having its edges serrated or toothed, and arranged substantially as set forth and for the purpose specified.

No. 48,435.—Elijah Freeman Prentiss and Robert Adam Robertson, Philadelphia, Penn.—*Apparatus for Distilling Petroleum.*—June 27, 1865.—This invention relates to improvements upon the patent granted to the same parties the 8th day of March, 1864, and consists in doing away with the danger of damage to the condenser by expansion and contraction thereof; in giving a free boiling space above the surface of the oil in the condenser; in making the auxiliary head a part of the column, thus dispensing with collecting pipes and lessening the surface liable to cause condensation; in making the condenser square instead of round, and having the inlet and outlet pipes on the same side, thus allowing the condensers to be conveniently ranged on a straight line; also in feeding the condensers with oil in such a manner that it is distributed equally over all the parts: in obtaining an enlarged air chamber and an increased surface for steam heating by a better disposition of the vapor pipes, without increasing the size of the columns.

Claim.—First, the employment of the bent vapor, steam, and air pipes *a b* and *c*, arranged constructed, and operating substantially as shown and described.

Second, constructing the column so as to have a space I unobstructed with pipes for the free boiling of the oil, substantially as shown and described.

Third, constructing the column so that the head K shall form a part thereof, the same being arranged, constructed, and operating in the manner and for the purpose substantially as shown and described.

Fourth, the slotted pipe or trough L in combination with the column, whereby the cooler oil is fed in and distributed equally over the pipse, arranged and constructed substantially as shown and described.

No. 48,436.—Elijah Freeman Prentiss and Robert Adam Robertson, Philadelphia, Penn.—*Apparatus for Distilling and Rectifying Whiskey.*—June 27, 1865.—This invention (which is designed as an improvement on the patent of the same inventor dated March 1, 1864) consists in providing an additional chamber, with a thermometer, to be kept at a lower temperature than chamber 2 of the former patent. The weak spirit from the chamber is made to pass into boxes, while the spirit from chambers 2 and 3 falls upon the top of these boxes.

Claim.—First, the employment of chamber A, constructed substantially as described, and having a separate regulator, so that the said chamber can be maintained at any desired temperature lower than that of chamber 2, for the purpose of more effectually dehydrating the alcohol.

Second, the employment of boxes R1 R2, &c., attached to the upper shelves in chamber 4, in the manner and for the purpose substantially as described.

Third, the trough *e'* in combination with the pipe *e* and chamber A, arranged, constructed, and operating substantially as described.

No. 48,437.—Peter J. Peretz, Milwaukee, Wis.—*Melodeon.*—June 27, 1865.—On one side of the instrument a shaft is placed provided with two levers capable of being operated by the knee of the player. These levers operate the shutters that close two sets of reeds in such manner as to open the same when required. These levers are so arranged that a short motion of one lever will open one shutter, and that a longer motion of the other lever will open the other shutter. The opening of the first shutter increases the volume of sound, and the opening of the second shutter produces two notes, one of which is an octave higher than the other.

Claim.—First, the arrangement of closing and operating the reeds at F and H by means of shutters J and G, and operated by arms *d* and *h* fast to a shaft K, when arranged and operating in the manner substantially as described.

Second, operating the shaft K by means of a lever *f*, acted upon by the said knee of the player in such a manner as to open either one set of reeds or both sets, as may be desired, substantially as set forth.

No. 48,438.—John Ramdohr, Virginia City, Nevada.—*Process for Refining Metal.*—June 27, 1865.—This invention consists in treating bullion broken into small pieces with sulphuric or muriatic acid, then washing it with water, after which the pieces are heated in a reverberating furnace to a red heat, the pieces being exposed to the influence of the atmosphere while being heated. The pieces are then taken out of the furnace and while hot again subjected to the action of the acids, then washed and heated as before; this process is repeated until the bullion is perfectly refined.

Claim.—The within-described process of refining the amalgam of gold and silver, commonly known as crude bullion, said process consisting of three subsequent manipulations, substantially such as set forth.

No. 48,439.—Henry Redlich, Chicago, Ill.—*Artificial Fuel.*—June 27, 1865.—This invention consists of coal dust, four parts; cow dung, three parts; and blood, one part.

Claim.—The within described combination of the ingredients above specified and mixed together, substantially in the manner and about in the proportion set forth.

No. 48,440.—John Reichenbach, Pittsburg, Penn.—*Substitute for Artificial Hands.*—June 27, 1865.—This invention consists of a pair of pincers attached to a case to be worn over the stump of the natural arm and operated by means of a cord attached to the arm above the elbow in such a manner that by extending the arm the pincers are opened, and by flexing the arm again the pincers are closed. On the top of the upper pincers is arranged a hook for convenience in lifting articles.

Claim.—The use of a pair of pincers, constructed substantially as described, attached to a case to be worn over the stump of the arm which has lost the natural hand, and operated by means of a cord attached to the arm above the elbow, as a substitute for an artificial hand.

Also, the combination of the pincers and hook, constructed substantially as described, for the purposes hereinbefore set forth.

No. 48,441.—William Rice, Concord, Ill.—*Wheat Drill.*—June 27, 1865.—In this invention separate frames are pivoted within a stationary main frame. Each of the inner frames are pivoted at its front end and carries an opening runner and roller. These frames, when elevated singly, raise both the runner, roller, and seed tube.

Claim.—The combination of the frame A, pivoted frames E E, wheels B G, and furrow cutters H, all constructed and arranged to operate as specified.

No. 48,442.—M. A. Richardson, Sherman, N. Y.—*Washing Machine.*—June 27, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—First, the adjustable apron I I in combination with the elastic spring K and the wooden springs G G, constructed and operated in the manner and for the purposes specified, substantially as set forth.

Second, in combination with a washing machine constructed with two adjustable aprons, which are connected by an elastic spring and a series of rollers resting upon wooden springs, as represented, the clothes box M, constructed and operated in the manner and for the purposes specified, substantially as set forth.

No. 48,443.—E. S. RITCHIE. Brooklyn, N. Y.—*Binnacle.*—June 27, 1865.—This invention consists of an arrangement of prisms by which light is so directed from a lamp in the upper part of a binnacle through two lenticular prisms so disposed with reference to the lamp and the mariner's compass beneath it that through one of the prisms a soft and mild light illuminates the whole card of the compass, while through the other the rays are so deflected as to fall in a brilliant pencil upon that portion of it from which the magnetic course is to be read. Either one or two shutters or screens may be so fitted to the interior of the lamp case that by means of a lever and working slide, with a knob extending through a slot to the exterior of the case, the light may be shut off from either one or both lenses at will.

Claim.—The combination of one or two lenticular prisms, or the equivalent or equivalents thereof, with a binnacle and its lamp, substantially in the manner and for the purpose of illuminating the compass, or part of the same and a part of the compass box, as specified.

Also, the binnacle lamp as made with a recess in its side to cause it to rest on the bottom of the lamp chamber and fit around the prism case, as specified.

Also, the combination as well as the arrangement of the prism case D and the light-discharging passage or mouth E, with the binnacle chamber and the lamp chamber, as specified.

Also, the combination of the movable shutter or screen O and its operative mechanism with the lamp, the lenticular prism, and its case, and the lamp and binnacle chambers, arranged substantially as described.

No. 48,444.—ANDREW J. RITTER, Rahway, N. J.—*Carriage Spring.*—June 27, 1865.—This invention consists in the use of double side spars placed upon the axles, and provided with longitudinal braces of leather or rubber belting. The lower spars connect the axles and form the carriage part in such manner as to do away with steel springs, perch irons, body irons, &c.

Claim.—The double side spars A *a* A *a*, or their equivalent, in combination with the thorough braces K K, cross bars I L, axle *c'*, and axle bars F F, for the purpose herein set forth and specified.

No. 48,445.—CYRUS ROBERTS.—Three Rivers, Mich.—*Cultivator.*—June 27, 1865.—This invention consists in hinging the plough beams to the frame, and connecting them by means of stay rods to flaps, likewise pivoted to the frame, whereby the ploughs are lifted from the ground by the action of the stay rods. In connection therewith the driver's seat is mounted on radial bars, and connected with the plough in such a manner that the seat moves back and forth as the ploughs are lowered or raised, whereby the machine is counterbalanced, whether the ploughs are in or out of the ground. It also consists in the combination of the driver's seat with the ploughs by means of an adjustable connection, whereby the machine can be balanced with drivers of different weights.

Claim.—First, the combination of the plough beams with the flaps and stay rods, substantially in the manner described, for the purpose set forth.

Second, the combination of the frame, the movable driver's seat, and the ploughs, substantially as and for the purpose described.

Third, the combination of the adjustable driver's seat and hand lever with the adjustable link rod *s*, as and for the purpose described.

Fourth, the combination of the frame, the driver's seat, and the ploughs with the rear flap and stay rods, substantially as described, whereby the driver can exert his whole weight in raising the ploughs, as set forth.

Fifth, the combination of the frame and driver's seat with the shifting ploughs and elbow levers, when arranged and operating as described.

Sixth, the combination of the plough beam and stay rod with the hinged socket and wooden pin, when arranged and operating as described, for the purpose set forth.

No. 48,446.—JOSEPH ROGERS, Nashua, N. H.—*Water Door for Furnaces.*—June 27, 1865.—This invention consists of an iron shell cast around pipes, so that a constant stream of water can be made to flow through them.

Claim.—As an improved article of manufacture a door for furnaces, provided with internal tubes to form a water-passage through them, substantially as and for the purpose herein set forth.

No. 48,447.—JOHN ROSS, Philadelphia, Penn.—*Jack for holding Shoes.*—June 27, 1865.—This invention consists in a device whereby the jack can be rotated so as to present any portion of the edge of the sole towards the workman, and whereby the shoe, without unclamping, may be turned in any position for the purpose of sewing the sole, the whole being effected by means of the combination of the pin, rack and pawl, sliding block and pad, of a swivel, plate, and base, and finally of a swivel joint and rotating bearing.

Claim.—First, the combination of the pin, rack and pawl, and sliding block and pad, arranged substantially as set forth and described.

Second, the combination of the swivel G, plate M, and base L, arranged and used substantially as drawn and described.

Third, the combination of the swivel G, joint J, and rotating bearing K, when arranged substantially as set forth and described.

No. 48,448.—JOHN ROSS, Philadelphia, Penn.—*Heel Shave.*—June 27, 1865.—This invention consists in applying an adjustable blade sliding toward and from the guard of the device.

Claim.—The adjustable blade combined with the adjustable guard of heel-shaving tools, when constructed and operating substantially in the manner hereinbefore set forth and specified.

No. 48,449.—J. F. SANBORN, Hardwick, Vt.—*Churn.*—June 27, 1865.—In this invention the concave bottom of the churn is furnished with ribs arranged in V-shape, all inclining towards the centre of the churn. The dasher blades are also ribbed.

Claim.—First, the arrangement of revolving staves or beaters which are adapted for producing butter from cream, and then working the butter in conjunction with the obliquely ribbed concave, substantially as described.

Second, the combination of the long and short beaters or staves *d d* and *e e*, which are grooved and ribbed, with the oblique ribs *b b*, and plane portions of the churn bottom, substantially in the manner and for the purpose described.

Third, the arrangement of the ribs *h h* upon the surface of the concave bottom of the churn box, so that these ribs all incline toward the centre of the bottom of the box and toward one end thereof, substantially as described.

No. 48,450.—HUGH and JAMES SANGSTER, Buffalo, N. Y.—*Kerosene Oil Burner.*—June 27, 1865.—This invention consists of a spring at the base of the burner, so made that the burner may be connected to the collar by pressing it down and turning it partly round.

Claim.—First, constructing the spring E so that it connects the burner to the collar B by pressing it down into said collar, and turning it around until it springs over either corner J or J′ into the notch K, thus bringing the spring under the lower edge of the collar.

Second, in so constructing the lower part A of the collar B that when the burner is turned so that the spring passes the corner J it is forced into the case A, and allows the burner to be drawn out easily.

No. 48,451.—GEORGE W. SARGENT and PLUMER H. CHESLEY, Chelsea, Mass.—*Meat-chopping Machine.*—June 27, 1865.—This invention consists in the peculiar construction of the arms on which the knives are placed, and the means of operating them by a crank in connection with a rotating tub.

Claim.—The arrangement of the crank shaft *a*, the application of the chambers *n* on the knife rods *b*, the diagonal position of the knives, and the operation of the ratchet, in the manner and for the purpose as described.

No. 48,452.—JAMES B. SARGENT and FRANCIS W. TOWNE, Fitchburg, Mass.—*Steam Cock.*—June 27, 1865.—The object of this invention is to so arrange the parts composing a steam cock that the valve shall be certain to set tight irrespective of wear, and that leakage around the stem shall be prevented during a great length of time.

Claim.—An improved steam cock, made as described, viz., not only with the lifting screws, arranged with or applied to the stem of the valve and the cap B, as set forth, but with the valve stem provided with a key socket *k* to receive the key head *l*, as specified.

Also, the combination and arrangement of the wooden annuli *r s* and the flange *q* with the stem C, the chambered cap B, and its screw cap nut E.

Also, the combination of the auxiliary guide *g* and the socketed projection *h* with the case A, the valve *f*, and its lifting screws and key C, arranged with respect to it as described.

No. 48,453.—CHARLES SENTELL, Waterloo, N. Y.—*Mode of Renewing the Surface of Printers' Rolls.*—June 27, 1865.—This invention consists in removing the hardened surface of printers' rolls, and recoating the same, by placing them in a mould and turning the melted material around them.

Claim.—Removing the hardened surface of printers' rolls, and recoating the same, by placing them in the mould C and turning the melted material around them, substantially as herein set forth.

No. 48,454.—S. L. SIMPSON, New York, N. Y.—*Ruler.*—June 27, 1865.—This invention consists in the employment of two or more spring stops applied to a strip of sheet metal which is secured to the upper surface of a ruler. Holes are bored through the ruler in such manner that by pressing on the ends of the strip of sheet metal the stops are depressed through the holes upon the paper or other surface on which the ruler is to be used, and an accidental slipping of the ruler prevented.

Claim.—The spring stop *d*, applied in combination with a ruler A′, substantially as and for the purpose set forth.

No. 48,455.—GEORGE L. SMITH, Brooklyn, N. Y.—*Grate for Steam-boiler Furnaces.*—June 27, 1865.—This invention consists of a grate divided into sections by longitudinal and transverse sections, and arranged so that each section will rest upon disconnected supports or trusses of an inverted V-shape and transverse beams.

Claim.—First, a grate surface formed of a series of sections upon which the fuel is placed in combination with a series of disconnected supports or trusses and traverse bearers, substantially in the manner and for the purposes herein set forth.

Second, a grate divided into sections by longitudinal and traverse divisions in combination with a series of disconnected supports or traverses and traverse bearers and a grated surface, substantially as and for the purposes described.

Third, the combination of disconnected supports or trusses with taper upper edges, traverse bearers, and a grated surface, substantially as and for the purposes set forth.

Fourth, trusses or supports for a grated surface made free from the grated surface and from the transverse bearers, substantially as and for the purposes set forth.

Fifth, so arranging the sections and the trusses or supports of a sectional grate that each section will be supported and balanced, substantially in the manner described.

No. 48,456.—DANIEL E. SOMES, Washington, D. C.—*Cooling Air in Buildings and Chambers.*—June 27, 1865.—This invention consists in constructing chambers and tanks beneath the surface of the earth, or under water in rivers, bays, &c., so that warm air shall be excluded, but means provided for ventilating with cool air. They are to be used for salting and curing meat, storing provisions, spirits, oils, or other substances requiring a low temperature for preservation.

Claim.—First, constructing submarine buildings, tanks, or chambers, substantially as described and for the purposes set forth.

Second, ventilating submarine buildings, tanks, or chambers, substantially as described and for the purposes set forth.

Third, cooling air by means and for the purposes herein set forth.

Fourth, cooling tanks and their contents in the manner herein specified.

Fifth, constructing and ventilating buildings, chambers, or tanks below the surface of the earth, for the purpose and in the manner herein set forth.

No. 48,457.—DANIEL E. SOMES, Washington, D. C.—*Cooling and Ventilating Ships and other Vessels.*—June 27, 1865.—This invention consists in the use of tubes of a bell shape, arranged in rows or groups, as may be most convenient, and running from the upper deck to near the bottom of the vessel. On one side of the ship the larger ends of the tubes are uppermost, and on the opposite side the smaller ends are uppermost. By this arrangement it is claimed a constant current of air is maintained through the bottom of the ship.

Claim.—First, constructing canal boats and other vessels with tubes or air ducts extending below the deck, and in a diagonal position with it.

Second, air ducts made in a funnel form, and used substantially as described.

Third, using water pipes or channels, substantially as and for the purpose set forth.

Fourth, using water pipes and air tubes in combination, substantially as set forth and described.

Fifth, increasing water pipes and conducting off water from condensed air, substantially as set forth.

No. 48,458.—LE ROY S. STARRETT, Newburyport, Mass.—*Washing Machine.*—June 27, 1865.—This invention consists in a means for operating the plunger, whereby an up and down, and also a rotary, motion is communicated to the same; and the invention also consists in the employment of a yielding perforated partition plate in the suds-box, whereby the cleansing or washing operation is greatly facilitated.

Claim.—The washing machine herein described, consisting of the suds-box P, false bottom Q, springs R, plunger O *l*, adjustable rod M, walking beam H, crank F, pitman I, tubes J K, pawl N, ratchet wheel L, all arranged to operate as specified.

No. 48,459.—HENRY B. STOCKWELL, Booklyn, N. Y.—*Fulminate Gas Lighter.*—June 27, 1865; antedated June 17, 1865.—This invention consists of a socket containing vertical passages; one of which passages extends through the socket, and is tapped so that it can be attached to an ordinary gas pipe; the other passage extends only partly through the socket, terminating in a transverse passage, in which a plug is inserted. A plunger and spiral spring are secured in the passage, extending only part way through the socket, the plunger operating as a hammer, by means of which the fulminate is ignited. Below the transverse passage there is a branch tube to contain the fulminate, which is made in the form of a stick; in the lower end of this tube is a plug, to which is attached a spiral spring, which keeps the fulminate constantly pressed against the plug.

Claim.—First, so applying a fulminate and a hammer or its equivalent, in combination with each other and with a gas burner, as to produce the ignition of the gas issuing from the burner

by the action of the hammer, or its equivalent on the fulminate, substantially as herein described.

Second, so combining the stop-cock which admits the supply of gas to the burner with the hammer or its equivalent, as to produce the action of the latter by the act of opening the former to turn on the gas, substantially as herein set forth

Third, the hollow plunger or hammer D, rod *q*, and cam *t*, combined with each other and with the stop-cock and burner, and operated substantially as herein specified.

Fourth, one or more cavities, *l l*, in the plug of the stop cock operating in relating to a passage *f* containing the fulminate, and a passage *e* containing the plunger or hammer D, substantially as and for the purpose herein described.

No. 48,460.—HENRY B. STOCKWELL, Brooklyn, N. Y.—*Fulminating Compound.*—June 27, 1865; antedated June 17, 1865.—This invention consists of fulminating mercury four parts, saltpetre three parts, black sulphuret of antimony two parts, and French chalk one part.

Claim.—The fulminate compound, composed of materials herein specified, in about the proportions herein set forth.

No. 48,461.—JAMES STRATTON, Brooklyn, N. Y.—*Street Lamp.*—June 27, 1865.—This invention consists in a combination of two reflectors, having vitreous corrugated surfaces, with a street lamp.

Claim.—The two reflectors B D, with vitreous corrugated surfaces, in combination with the street lamp A C E, all constructed, arranged, and operating as and for the purposes specified.

No. 48,462.—JOHN S. P. TAYLOR, Oxford, Ohio.—*Carbine Socket.*—June 27, 1865.—This invention consists of a socket formed by winding India-rubber cloth around a proper form, the socket being made larger at the ends than in the middle. The socket is bound over at the edges, and covered with a coating of India-rubber, and the strap and buckle attached by means of rivets.

Claim.—A carbine socket formed of alternate layers of cloth and India-rubber, or their equivalents, substantially as described and to the effect set forth, as a new article of manufacture.

No. 48,463.—WILLIAM TOSHACH, New York, N. Y.—*Spring Catch for Window Sash.*—June 27, 1865.—This invention consists in making a knob of two parts, one fastened to the bottom of the sash, the other hinged to the first on the top of it, and having an arm projecting into the frame of the sash, and connecting with an angular lever, which lever in turn is connected by a wire to a spring actuated stop. The operation is such that when the double knob is grasped by the thumb and fingers to raise or lower the sash, the two parts of the knob being forced together, draw the stop and allow the sash to be raised or lowered.

Claim.—The arrangement in or upon a window sash, in combination therewith and with the arms *c* and *d* of an angular lever, A of a spring-actuated window catch B, and a hinged lever and window knob *a b*, as described, in such a manner as that pressure exerted upon the knob to raise the sash will also disengage the fastenings, all substantially in the manner herein set forth

No. 48,464.—L. D. WALRAD, Sycamore, Ill.—*Device for Preventing Snow Drifts on Railroad Tracks.*—June 27, 1865.—The object of this invention is to obtain a means for preventing snow from drifting and accumulating on railroads, when the latter are by the sides of hills, or have an elevation at one side of them.

Claim.—The employment or use of inclined planes, placed at the side of and in a relative position with the track, to operate in the manner substantially as and for the purpose set forth.

Second, the manner substantially as shown and described, of constructing the inclined planes so that they may be adjustable, as and for the purposes specified.

No. 48,465.—ZACHARIAH WALSH, Newark, N. J.—*Machine for Putting Head Filling on Trunk Nails.*—June 27, 1865.—This invention consists of a machine for putting the pieces of pasteboard on trunk and similar nails, and which form the principal portion of the filling for the enlarged heads of said nails. It does not admit of a brief description.

Claim.—First, the employment or use of a rotating wheel A′, provided with recesses to receive a series of dies *j′*, in which the pasteboards D and plates C are deposited in connection with a punch G″, and a nail-driving mechanism for pressing or passing the nails through the pasteboards and plates, substantially as and for the purpose herein set forth.

Second, the rotating notched wheel L″, encompassed partially by the strap S″, in connection with the jaws *y″ y‴*, for the purpose of presenting the nails properly to the punch G″ and the pasteboards and plates in the dies *j′*, substantially as described.

Third, the parallel bars *p″ p″*, in combination with the hopper H″, wheel L″, and spouts J″ K″, for the purpose of presenting the nails to the wheel L″, substantially as set forth.

Fourth, the perforated tubes F N to receive the sheet-metal plates C, arranged in the machine substantially as shown, so as to be movable, and placed alternately in positions for being filled and discharged, as herein described.

Fifth, the employment or use of an air pump W, in connection with a lifter X, arranged as shown, or in any equivalent way, for the purpose of taking the plates C from the tube N or N′, and depositing them in the dies j', of the wheel A, as set forth.

Sixth, the spring n at the upper end of the tubes N N′, in connection with the pressure lever L′ and the slide M′, or its equivalent, arranged substantially as shown, for the purpose of liberating the upper plate in said tubes, and admitting of the discharge of the same at the proper time, substantially as described.

Seventh, the rod S, fitted in the tube N or N′, and operated upon by the weight V, in combination with the spring n, pressure lever I, and the slide M′, or its equivalent, for the purpose specified.

Eighth, the catch X′, arranged with the rod V′ of the lever U′, substantially as shown, in combination with the pivoted plate e'', provided with the arm or bar g'', connected with the catch X′ by the links h'', for the purpose of constituting a means for the several stop mechanisms herein described, to act upon the lever U′ and clutch I, as set forth.

Ninth, the rods E″ F″ passing through the arm g, and provided with the collars and springs, as shown and arranged, with the pivoted plate e'' and the arm g'' of slide Z, to operate or act upon the latter so as to stop the machine when necessary, as herein described.

Tenth, the rod E‴ passing through the pivoted plate e'', and provided with the collar h''', in connection with the lever D‴ and rod C‴, connected with the arm f''', all arranged substantially as shown, to form a stop mechanism for the nail-discharging device, as set forth.

Eleventh, the lever R″, with pendent pivoted bar Q″, provided with the shoulders d''', in connection with the projection e''' on the slide Z, the lever R being placed relatively with the plate e'', and all arranged as shown, to serve as a stop mechanism for the wheel L′, as described.

Twelfth, the lever X″ connected with the lever or bar Z″ by the link Y‴, in connection with the spring C‴ and the cam A‴ on the shaft G, all arranged as shown, for discharging the nails from the wheel A′.

Thirteenth, the bent or curved bar Y, spring e', and the arm g' of slide Z, for operating the lever X, or moving it from over the tube N or N′ to a proper position over the wheel A′, and back again over the tube N or N′ for the purpose specified.

Fourteenth, the plunger rod r and spring o, in connection with the lateral projection p, an arm g' for ejecting the plates C from the cylinder q for the lifter, as set forth.

Fifteenth, the rod T attached to the arm or operate or plate k of the rod S, and provided with an upper bevelled end t, in combination with the fixed plate t' and catch X′, all arranged substantially as shown, to form a stop mechanism in connection with the discharging of the plates C from the tube N or N′, substantially as described.

No. 48,466.—Hervey Waters, Northbridge, Mass.—*Guide for Roller.*—June 27, 1865.—This guide is composed of a horizontal plate upon which the bar is to rest when being presented to the rolls, and two side cheeks hinged to projections on said plate, in such manner as to accomodate themselves to the inequalities in width of a tapering bar or to bars of different widths, and thus maintain a uniform direction of movement of the bar until the rolls shall have drawn it forward off the guide.

Claim.—A self-adjusting roller guide, constructed to operate substantially as set forth.

No. 48,467.—Walter S. Wells, New York, N. Y., and S. B. Wells, Middleburg, N. Y.—*Mode of Driving Machinery.*—June 27, 1865.—This invention consists in the employment, in combination with a motive spring or its equivalent, and a suitable system of gearing, of a governor and adjustable friction device for regulating and controlling the speed at which the driving mechanism shall run, and thus driving the machine to which the power is to be applied at any given uniform speed.

Claim.—The employment, in combination with a motive spring and the system of gearing, a governor and friction controlling and regulating device, substantially as and for the purposes hereinbefore set forth.

No. 48,468.—P. Werum, Berlin, Ohio.—*Stave Machine.*—June 27, 1865.—This invention consists of a curved base on a reciprocating carriage, having the curvature of the stave, and upon it the stave is clamped and brought in contact with two saws that work in adjustable frames, so that both sides of the staves are cut to the exact bevel and shape desired.

Claim.—The sliding frame *B*, the adjustable saw frames C C E E, the adjustable rest G and arch L, the catch J, fingers g g and curved lever n, when these several parts are arranged, so as to operate as and for the purpose set forth.

No. 48,469.—Isaiah M. West, Wilmington, Ohio.—*Churn.*—June 27, 1865.—In this invention the lever is fastened to the dasher rod by means of a notched pin and slot in the lever, held by a spring so as to be quickly detached. The dasher is formed of a small perforated box with a rim around it.

Claim.—The combination pin D in the lever slot *e* and dasher rod *c*, with the spring catch *f*, for the purposes herein specified.

Also, the construction of the dasher C, with the vertical perforated sides *h h*, close rim *g*, and close swing lids G G, substantially as and for the purposes herein set forth.

No. 48,470.—WILLIAM WHARTON, Jr., Philadelphia, Penn.—*Railroad Switch.*—June 27, 1865.—This invention consists in the arrangement of rails and a movable switch, for the purpose of transferring cars from the main track to the turn-out without injuring the main rail, by reason of the contact of the flanges of the wheels when passing over it, the switch rail being so elevated that the wheel passes freely over the main track rail.

Claim.—The combination of the permanent rails A A′ of the main track, the permanent rails B and B′ of the turn-out, and the rails D and D′, comprising the movable switch, and forming continuations of the permanent rails of the said turn-out, when the rail D is so inclined that it will raise the wheels on one side of a car above the permanent rail A of the main track prior to the wheels being guided laterally by the tapering rail D′, or its equivalent, all substantially as set forth.

No. 48,471.—EDWIN WHITEFIELD, Buffalo, N. Y.—*Printing Fluid.*—June 27, 1865.—This invention consists of a composition as follows: One pound of nitric acid is mixed with two ounces sulphuric acid, quarter of a pound of logwood, and quarter of a pound of Chinese blue. Iron filings are then added, and the whole is mixed with a strong decoction of logwood.

Claim.—A printing fluid composed and manufactured of the ingredients and applied substantially as herein described.

No. 48,472.—GEO. W. WICKS, Brooklyn, N. Y.—*Roller Die.*—June 27, 1865.—This invention consists in communicating motion to the rolls through the medium of a particular arrangement of worm gearing, in order to cause the dies to meet each other with greater exactitude than is possible with gearing such as is ordinarily used.

Claim.—The combination of the rolls with an adjustable worm shaft, arranged substantially as specified and for the purposes set forth.

No. 48,473.—ANDREW WINTERBURN, Albany, N. Y.—*Guard Finger for Reaping Machines.*—June 27, 1865.—This invention consists in constructing the guard finger with a cavity underneath the slot, through which the cutter is to play, and casting white iron into said cavity and against a chill plate placed over the same, thus producing a chill-hardened surface upon that part of the finger which is liable to be worn by the action of the cutter upon it.

Claim.—Constructing the guard finger or knife guard A with the chambers or cavity B, and casting hard metal in said cavity or chambers, substantially in the manner and for the purpose described.

No. 48,474.—L. H. WOOD, Marlboro', Mass.—*Machine for Punching Leather.*—June 27, 1865.—This machine consists mainly of a punch and die or anvil, the former working vertically, and a presser foot, arranged in such manner that, immediately after a hole has been punched, the presser foot is raised up so as to release the bar or other article which is being punched, and a lateral translatory movement is given to the punch, by which (the punch being still within the hole just made by it,) the bar will be carried along over the anvil the distance required for another hole to be made, then the presser foot again descends and clamps the bar, the punch is elevated, and by means of springs forced back to its original position, and then descends again to punch another hole. The lateral movement of the punch, and consequently the distance which shall separate one hole from another, is regulated by set-screws.

Claim.—First, giving a simultaneous lateral motion to the punch carrier B and bed E, substantially as set forth and for the purpose described.

Second, holding the work by means of the presser L, during the lateral translatory movement of the punch, substantially as described.

Third, rendering the punch adjustable, so as to punch holes any required distance apart, substantially as described.

No. 48,475.—LINUS YALE, Jr., Shelburne Falls, Mass.—*Locks.*—June 27, 1865.—This invention consists of a mortise lock, the case of which has on each side a screw-tapped hole, into either one of which is screwed a cylinder containing a series of pin tumblers, which are operated by a thin flat key. Screwing the cylinder into one or the other of the two holes in the case adapts the lock to either a right or left hand door, and it is adapted to doors of different thicknesses by screwing the cylinder to a greater or less distance into the lock case.

Claim.—First, the contrivance substantially as described for holding a bolt in place.

Second, the combination of a lock case, containing a bolt with a cylindrical chamber containing tumblers, all constructed and arranged with reference to each other, substantially as described, whereby the lock may be made right or left hand, or fitted to either thick or thin doors, the combination being substantially as set forth.

Third, the combination of a cylinder containing tumblers, and having a screw cut thereon, with a lock case having a nut attached to or making part thereof, and a screw pin, or its equivalent, arranged as described, whereby the former may be attached to the case so as to fit doors of different thicknesses, and secured in position by a device, which is so arranged as to be acted upon through the bolt hole.

Fourth, notched pin tumblers, in combination with a keyhole slit narrower than the diameter of the pins, and also notched, containing recesses, in combination with a keyhole slit narrower than their diameter, the combinations being substantially such as described, and operating substantially as set forth.

Fifth, in combination with a cylinder containing a keyhole and pin tumbler, a wing or lazy arm, constructed and operating as specified.

No. 48,476.—LINUS YALE, Jr., Shelburne Falls, Mass.—*Reversing the Motion of Screw Taps.*—June 27, 1865.—This invention will be understood by reference to the claim.

Claim.—The combination of two recessed pulleys with two corresponding disks to clutch therewith, and a line spindle, to which the latter are attached, arranged substantially as described, so that the spindle can be clutched to either pulley and made to rotate in accordance with the motions thereof by a force employed to push or to pull said spindle longitudinally in either direction, substantially as described.

No. 48,477.—F. W. BACON, assignor to the NEW YORK DESICCATING COMPANY, New York, N. Y.—*Vegetable Washer.*—June 27, 1865.—This invention consists in a rotating cylindrical cage, containing a spirally-formed grate, extending the length of the central shaft, and from the shaft to the circumference of the cage, for the purpose of producing a movement of the vegetables from one end to the other of the cage as it rotates in a tank of water. The principal novelty in the machine consists in its having a hollow central shaft extending through the cage, and perforated at short intervals, for the purpose of throwing among the vegetables, in numerous streams, clean water, received through a pipe entering one end of the shaft.

Claim.—The hollow perforated shaft B, receiving water at one end and delivering it in numerous jets or streams from its perforations, in combination with the revolving cylindrical cage and the spiral grate or grates, or their equivalents, arranged between the said shafts and the circumference of the cage, substantially as herein described.

No. 48,478.—HORACE BOARDMAN, assignor to himself and KELBY, DE MILL & CO., New York, N. Y.—*Manufacture of Wrought Iron from the Ore.*—June 27, 1865.—This invention consists of a furnace provided with two hearths, the balling hearth being separated from the grate by means or a bridge wall. At one end of the furnace, directly over the other hearth, is a reducing furnace, which is enclosed on three sides by gas chambers, which communicate with the reverberating furnace. In the upper part of the reducing furnace is a steam jet pipe, by means of which the draught may be increased, and a door is provided for introducing ore and fuel. A series of tuyeres passes through the outer wall of the gas chamber, and terminates in the said chamber directly opposite the apertures which lead to the fire chamber. When the furnace is in operation the blast of air through these tuyeres carries the heated products of combustion from the furnace out of the gas chamber and into the fire.

Claim.—First, the reducing fire F, combined with the gas chamber G and its tuyeres, substantially as described, for the purpose set forth.

Second, the combination and arrangement of the said reducing fire with a reverberatory furnace and balling hearth, in the manner described, so that the escaped combustible gasses from the said furnace or hearth can be used, when ignited by blasts of atmospheric air, for deoxidising and smelting the ore in the said reducing fire, as herein set forth.

Third, subjecting the ore in a reducing fire, while mixed or in contact with carbonaceous fuel, to the action of the escaping gases from the fire on the grate A, the gases being ignited by the introduction of atmospheric air, substantially as herein described.

No. 48,479.—LEVERETT BRADLEY, Jersey City, N. J., assignor to MARSHALL LEFFERTS, New York, N. Y.—*Machine for Perforating Paper for Telegraphs.*—June 27, 1865.—This invention consists of a punch provided with a reciprocating motion, so connected to the roller by a ratchet and cog wheel that the motion of the punch revolves it.

Claim.—First, the punch *c*, actuated by the lever *h*, and regulated in its movements by the adjustment of the nuts Q Q and shackle, substantially as specified.

Second, a reciprocating punch, in combination with a pair of rollers for drawing the paper along, and with a ratchet movement, actuated by the reciprocation of the punch, substantially as specified.

Third, a spacing lever or levers, combined with a pair of rollers for drawing the paper along and with a device for perforating the paper, substantially as and for the purposes specified.

No. 48,480.—SMITH W. BULLOCK, Elizabeth, N. J., assignor to THE BULLOCK ORE-DRESSING MACHINE COMPANY.—*Amalgamating Pan.*—June 27, 1865.—This invention will be understood by reference to the claim and engraving.

Claim. —First, the arrangement of the shafts of the plate E, and of the roller D, in a vertical position, or nearly so, in connection with the pan B, for the purposes set forth.

Second, the application of the springs to the boxes I I, for the purposes described.

Third, the application of gear or blank wheels, or of band pulleys, to the shafts C F and G, and to the pan B, for the purposes herein set forth.

Fourth, the application of an elastic coating or jacket to the roller D, in combination with an amalgamated plate of copper or other metal, for the purposes herein set forth, each of the several features being arranged substantially as and for the purposes described.

No. 48,481.—JOHN W. COLBURN, assignor to himself and O. F. CASE, New Haven, Conn.—*Water-proof Soles.*—June 27, 1865.—The object of this invention is to overcome a difficulty in the construction of combined rubber and leather soles for boots and shoes—the rubber to take the wear and resist moisture, and the leather for uniting the sole to the upper.

Claim.—A sole composed of an interior of rubber and a margin of sole leather, cemented together by a vertical butt joint, and of uniform thickness, or nearly so, without an insole, and made substantially as herein described.

No. 48,482.—EDWARD A. COOPER, assignor to himself and J. M. JOHNSTON, Buffalo, N. Y.—*Snap Hook.*—June 27, 1865.—This invention relates to the manner of constructing and fastening the spring which operates the moving lip of the snap. The spring is made tapering, and is driven into and held by a corresponding mortise made through the main bar of the loop, a lug being formed to lap over the mortise after the spring is driven in to prevent it from receding from its place.

Claim.—The tapering spring *d*, fitting and working in a corresponding groove in the thumb piece E, and passing through and secured by the mortise C and lug C′, substantially as described.

No. 48,483.—ALEXANDER H. EVERETT, assignor to AMERICAN CAR WHEEL AND RAILWAY CHAIR MANUFACTURING COMPANY, New York, N. Y.—*Manufacture of Iron.*—June 27, 1865.—This invention consists in the use of cryolite in the manufacture of iron. The cast iron is melted in an ordinary cupola furnace, and to every one hundred pounds of iron from three to five pounds of cryolite is added, and then it is treated in the ordinary manner.

Claim.—First, the employment of cryolite, or its component elements, in the melting of cast iron, for the purpose of refining and strengthening the same.

Second, the employment of cryolite, or its component elements, in the melting of cast iron and wrought iron mixed, thereby producing a metal of great strength and fineness.

Third, the use of cryolite as a purifying agent in the melting of iron.

No. 48,484.—HENRY B. FAIRMAN, assignor to the METROPOLITAN COLLAR COMPANY, New York, N. Y.—*Button Hole.*—June 27, 1865.—In this invention a button-hole, having a narrow recess at the upper side in the middle of its length, is made to rest down upon the shank of the button, and thus hold it to a central position and prevent strain upon the edges of the slit, and also, by the lateral position of the shank, to permit the button readily to dip into the slit in the act of unbuttoning.

Claim.—The construction of a button-hole with a recess b'', at or near the middle of the length of one side, substantially as and for the purpose herein specified.

No. 48,485.—JOHN GRIFFITHS, Litchwich, England, assignor to himself and Z. S. DURFEE, Pittsburg, Penn.—*Apparatus for Puddling Iron.*—June 27, 1865.—This invention consists of a device for giving motion to the rabble of a puddling furnace. A circular bed plate is firmly attached to the furnace, the said bed plate having a groove upon its upper surface in which balls are placed. A rotary circular plate rests on these balls, the said plate being provided with a standard which serves as a support for the gearing, by which motion is given to the rabble.

Claim.—First, attaching the jib *q*, which carries the hanger *r* (through the intervention of which motion is communicated from the crank *x* to the rabble or stirring tool *v* in puddling and other operations) to a base or plate *d*, which is movable automatically in a horizontal plane substantially as and for the purposes hereinbefore described.

Second, giving a reciprocating lateral motion in an arc of a circle to the jib *q*, and consequently to the hanger *r*, through the partial rotation of the movable plate *d*, produced by means of the curved endless rack 8 and the pointed shaft 5, having on its end a pinion working in said rack, and which carries with it the forked lever 11, substantially as hereinbefore shown.

Third, controlling the movement of the hanger and rabble by means of a bow 2, proportioned in shape and dimensions to the character and extent of the furnace bottom in which the rabble is to work.

Fourth, providing the free end of the hanger *r* to which the rabble is attached with a double fork, or the rabble with double pins, at suitable distance apart to compensate for the irregular enlargement of the furnace bottom.

Fifth, placing the axis, around which all the movements of the apparatus are made, so far back of the line of the working hole as to produce a leverage in the action of the rabble, at certain stages of the operations, in order to clean the jambs of the furnace.

Sixth, also communicating the peculiar stirring motion to a stirring tool or rabble, in puddling or other operations, by loosely attaching the free end of the tool to a hanging rod, to the point of suspension of which a reciprocating motion is given from side to side, while a simultaneous but more rapid motion is given to the hanging rod or tool holder to and fro, in the direction of the tool, by means of the combination of devices for that purpose, constructed and arranged substantially as hereinbefore described.

No. 48,486.—GEORGE R. HAY, assignor to himself and J. R. and E. SEELEY, Edgarton, Ohio.—*Stave Machine.*—June 27, 1865.—This invention consists in hanging the saw upon and between friction rollers set in a true circle, so that the saw is put in motion and driven by one of said rollers. These rollers are set in adjustable brackets, so as to be adjusted to the circle outside as well as inside of the saw, and it further consists of a reciprocating carriage having a gauge and dog which are worked by a cam lever to dog the stock.

Claim.—The arrangement of the adjustable brackets H H′ with the adjusting screws, rollers F F′, and saw D, operating as and for the purpose set forth.

Also, the carriage P, gauge L, cam lever p', dogs r r, and springs c', when arranged and operating as and for the purpose described.

No. 48,487.—HORATIO F. HICKS, assignor to HICKS BROTHERS, Grand View, Ind.—*Baling Press.*—June 27, 1865.—The feed door is automatically opened and closed by a revolving cam, and the packer is elevated and depressed by the same means, and thus operated by a force independent of its gravity. The irregular bulging contour of ordinary pressed bales is avoided, and at the same time the durability of the press increased by providing the baling doors with struts at their mid lengths, which struts support bridge rods whose rear ends become members of the hinges, whose stationary portions are secured to and extend entirely athwart one side of the trunk, and become at their other ends the corresponding members of the hinge of the other bale door.

Claim.—First, the revolving cage or cam, operating to automatically open and close the feed door, and to elevate and depress the packer by a force independent of its gravity, substantially as set forth.

Second, the arrangement of nut D, sill E, transom C, collars F, rings H H′, and rollers G, for the support and easy operation of the press as set forth.

Third, the provision of the parts 11, 22, 33, 44, 55, 66, or their equivalents, for the purpose explained.

No. 48,488.—GEORGE J. HILL, Buffalo, N. Y., assignor to himself and H. G. LEISENRING, Philadelphia, Penn.—*Numbering and Paging Machine.*—June 27, 1865.—A cross-head is arranged to slide in vertical guides formed in the side frames. In the longitudinal opening in the cross-head are fitted the stems of a number of hangers, each of which carries a numbering wheel, and each wheel has a number of projecting types for imprinting the numerals. The desired movement is imparted to the numbering wheels by rods, one of which is arranged to slide vertically in a bracket attached to each hanger. These rods have bent lower ends which are made to engage with the teeth of a ratchet wheel adjacent to the numbering wheels, and thus impart the desired motion to the latter.

Claim.—First, the reciprocating cross-head H and its system of numbering wheels in combination with the endless apron I, the whole being arranged for joint action, as set forth for the purpose specified.

Second, the bars V and V′ adapted to inclined openings in the standards or guide pieces T and T′, and supported by a spring or springs, all substantially as set forth and for the purposes specified.

Third, the hanger 8 with its numbering wheels and the spring 10, or their equivalents, for rendering the said numbering wheels self-accommodating to the thickness of the book, the pages of which have to be numbered.

No. 48,489.—L. D. HOIT, Medford, Mass., and ROBERT MURRAY, Boston, Mass., assignors to JAMES W. TUFTS, Medford, Mass.—*Draught Cock for Soda Water.*—June 27, 1865.—This invention consists of a cock with two outlets so arranged that the first outlet may be opened by means of a valve, and the other outlet by giving a partial rotation to the cock itself; the latter opens into a conical tube which terminates within the conical deflector opening into the gas chamber.

Claim.—First, the deflector G, constructed and arranged substantially as set forth, in combination with the chamber E or its equivalent, for the purposes described.

Second, the combination of the cone F with the cone G and nozzle E, substantially as and for the purpose described.

Third, providing the cock C with two channels a and b, and so arranging the same that the one may be opened and shut by means of the valve L, and the other by giving a partial rotation to the cock itself, substantially as and for the purpose described.

No. 48,490.—T. C. LUTHER, assignor to himself and AMERICAN FLASK AND CAP COMPANY, Waterbury, Conn.—*Machine for making Paper Boxes.*—June 27, 1865.—Circular boxes with

this machine are manufactured by winding the paper upon a cylinder and compressing it during the winding process by means of an auxiliary roller, the end of the paper being pasted to prevent its unwinding. After the paper tube is thus formed a series of circular cutters is pressed against it, dividing it into pieces of a length equal to the space between the cutters.

Claim.—The cutters H in combination with the rollers B C, arranged to operate in the manner substantially as and for the purpose specified.

No. 48,491.—NATHAN R. RAMSEY, assignor to DANIEL POMROY, Orange, Mass.—*Damper.*—June 27, 1865.—An annular space across which concavo-convex slots arranged alternately on upper and lower sides so that between the edges of the upper and lower slots are apertures through which the products of combustion pass when the damper is in a horizontal position.

Claim.—The above-described improved heat regulator or damper, or combination and arrangement of the ring *a* and the two series of concavo-convex bars *b b b d d d*, with openings between them, as set forth.

No. 48,492.—W. J. RAND, Brooklyn, N. Y., assignor to the NEW YORK DESICCATING COMPANY, New York.—*Desiccating Kiln.*—June 27, 1865.—In this invention two or more drying chambers are arranged one above the other, and having double or hollow floors, the upper one being perforated and the lower closed, and between the two are coils of steam pipes. In the lower part of the apparatus is a steam coil to which external air is admitted or forced, and whence hot air is conveyed by artificial flues at the sides or corners of the kiln into the drying chambers; its admission here may be controlled by registers. In the centre is an upright ventilating shaft extending from the lowest desiccating chamber up through the roof, through slotted openings and in this shaft the moisture from each chamber may flow off. On the outside of the kiln is an upright feeding trunk with apertures into each chamber; in each aperture is a door hinged at the bottom, so that when thrown back an inclined plane is formed, down which the substance to be dried will slide.

Claim.—First, a kiln for desiccating purposes, constructed with two or more desiccating chambers C C′, one above another, having double or hollow floors *a c* heated by steam pipes *d*, with an air heating or distributing chamber below, from which heated air enters the desiccating chambers by flues *h h* at the sides or corners thereof, and with a central ventilating shaft communicating with the several chambers for the escape of the moisture, the whole combined or ranged and operating substantially as herein specified.

Second, in combination with a kiln having several desiccating floors or chambers arranged one above another one feeding trunk F common to all the chambers, communicating with them by apertures fitted with doors *m m* hinged at the bottom, and so constructed that when thrown back from the said apertures they close the feeding trunk below, and form inclined planes, down which the substances slide into the desiccating chambers, substantially as herein specified.

No. 48,493.—JAMES SANGSTER, assignor to himself, ROCKWELL, BAKER & HILL, and E. B. SANGSTER, Buffalo, N. Y.—*Printing Press.*—June 27, 1865.—This invention consists of a movable revolving bed with flat surfaces and ink rolls suspended between two springs with a cylindrical impression roller.

Claim.—First, a revolving cylinder having a number of plain surfaces upon its periphery or circumference for the purpose of recessing the paper or card-board to be printed, and resisting the pressure of the type when brought down against it, when said cylinder is so constructed as to move and present its plain surfaces one at a time at the proper angle to receive an impression.

Second, the springs U′ and U2 between which the inking roller S is suspended, for the purposes specified.

Third, in combination with the revolving cylinder or roller B, three or more slats such as are shown at F8 F8 and F8, for the purpose of holding the card-board or paper in place while being carried under the belts B3 and B4, and in the position to be printed, when found necessary to feed or lay the cards or tickets in by hand.

Fourth, in combination with numbering wheels, revolving roller in cylinder upon the periphery or circumference of which the tickets or cards are numbered.

No. 48,494.—WILLIAM MONT STORM, Harlem, N. Y., assignor to himself and CHARLES J. FERGUSON, New York, N. Y.—*Railroad Spike.*—June 27, 1865.—The object of this invention is to produce a spike that, when driven into the sleeper and brought to its seat, shall be so fastened therein that the movement of the cars over the rails will not in the least degree loosen it.

Claim.—As an improved article of manufacture a railroad spike, made substantially as herein described.

No. 48,495.—FRANCIS TAGGART, LEWIS S. CHICHESTER, and CLARK W. MILLS, assignors to GEORGE H. NICHOLS, Brooklyn, N. Y.—*Grain Elevator.*—June 27, 1865; antedated June 12, 1865.—This invention consists of an elevator applied between two floats, and in a deck or house covering the space between said floats, and into which space a vessel loaded

with grain may be floated so as to be entirely under cover. At the same time the elevator is made much more steady in consequence of its base being broader and space is furnished in the deck or house for the reception of grain. The same deck or house can be used for drying, cleaning, and cooling, or grinding the grain.

Claim.—First, a floating elevator for grain, formed with a deck extending across a space left for the reception of a canal boat or barge between two floats, and provided with an elevator or elevators working through such deck for the removal of grain from the said canal boat or barge, substantially as specified.

Second, the spout *k* sliding in the trunk *l*, in combination with the elevator *d* fitted to be raised or lowered, as and for the purposes specified.

No. 48,496.—EDWARD WASSELL, assignor to himself and ARCHIBALD MCFARLAND, Pittsburg, Penn.—*Rolling Apparatus.*—June 27, 1865.—This invention consists in placing the grooved roll in the middle and the flanged rolls above and below the same, for the purpose as indicated in the claim.

Claim.—First, the use, in a series of three high rolls, of one grooved roll and two flanged or tongued rolls, the grooved roll being placed between the other two rolls, substantially as and for the purpose hereinbefore described.

Second, the use of L-shaped guides in combination with the grooved roll in the middle of a series of three high rolls, for the purpose of giving the iron a bearing from the points to the heel of the guide as it passes from between the rolls as well as clearing it from the groove, substantially as hereinbefore described.

No. 48,497.—WILLIAM WILSON, Jr., assignor to himself and CHARLES GREEN, Wilmington, Del.—*Metallic Hoop for Barrels, Casks, &c.*—June 27, 1865.—This invention consists in crimping the hoop transversely or diagonally, and thus giving to it an elasticity which allows it to accommodate its shape to the bilge, and prevents its becoming loose by the shrinking of the cask.

Claim.—A corrugated or crimped metallic hoop for casks, barrels, kegs, &c., substantially as herein shown and described.

No. 48,498.—E. P. WOOD, Lowell, Mass., and A. E. BLOOD, Lynn, Mass., assignors to WOOD, SHERWOOD & CO., Lowell, Mass.—*Bench Hooks and Clamps.*—June 27, 1865.—This invention consists of two parallel bars of wood loosely attached together by means of an iron plate pivoted to one bar that has a dog to it, and the other bar so that it can slide on the plate and be stopped at the desired point by means of a pin which slides in a slot, on one side of which are teeth, into the recesses of which the pin enters and allows the bar to slide so that this bar is brought in close contact with the stuff and securely clamps it.

Claim.—First, the jaws A B, in combination with the hook E and connecting bar C, substantially as and for the purposes set forth and described.

Second, in combination with the jaws A B and hook E, making the apparatus adjustable for thick or thin material by means of the rack D and pin C, or equivalents therefor, substantially as and for the purposes set forth and described.

No. 48,499.—HENRY WURTZ, assignor to WURTZ AMALGAMATING COMPANY, New York, N. Y.—*Extracting Gold and other Precious Metals from their Ores, &c.*—June 27, 1865.—This invention consists in adding to quicksilver to be used in the amalgamation of gold, silver, &c., of a small quantity of an amalgam of mercury and sodium, or of mercury, or other equivalent metal, as potassium; by this addition the mercury more readily attacks the precious metals. Mercury treated in this way will also form a mercurial film or coating on iron or steel, so as to form amalgamated surfaces, to take the place of the usual copper plates. The mercury so treated is less liable to flow.

Claim.—First, the combination with quicksilver, when used for the extraction by amalgamation of metals from their ores or their mixtures with other materials, of metallic sodium or metallic potassium, or any other highly electro-positive metal equivalent in its action thereto, as above set forth.

Second, in those amalgamations in which amalgamated plates of copper or other metal are used, the substitution for the plates of copper or other metal, of iron coated with quicksilver combined with sodium or other highly electro-positive metal, as above set forth.

Third, the coating of iron, steel, or other metallic surfaces between or under which ores or other materials are crushed, with quicksilver combined with sodium or other highly electro-positive metal, as above set forth.

Fourth, the prevention of the granulation or flowing of quicksilver when used in any method of amalgamating ores or other materials by addition thereto of sodium or other highly electro-positive metal, as above set forth.

No. 48,500.—THEODORE L. OEST, Berlin, Prussia, assignor to HENRY MAURER and ADAM WEBER, New York, N. Y.—*Enamel.*—June 27, 1865.—This enamel, consisting of chemical pure clay, chalk, feldspar, flint, barytes, white glass, and silicate of soda, in the described proportions, is claimed to be particularly applicable to clay gas retorts, in which,

by its use, the separation of carbon and graphite is easily effected without requiring the reburning of the retort, and the retort receives at the same time a solidity rendering unnecessary the exhausting operation.

Claim.—An enamel powder composed of the different parts mentioned, and in proportions substantially as specified and set forth.

No. 48,501.—JOHN CREA, Allegheny City, Penn.—*Heating Stoves.*—June 27, 1865.—This invention is set forth in the claim.

Claim.—First, the use of an air-chamber placed at the top of a close stove and having an imperforate top or cover and a perforated bottom, when such bottom is so curved, substantially as hereinbefore described, so as to form a circular recess for the detention of the gas and smoke.

Second, so arranging the perforated air-chamber, constructed substantially as hereinbefore described, that its top and sides, or the top alone, shall be parallel, or nearly so, with the top or cover of the stove, and at such a distance therefrom as to leave a narrow passage for the flame.

No. 48,502.—S. F. AMES, Stamford, Conn.—*Converting Rotary into Reciprocating Motion.*—July 4, 1865.—The object of this invention is to overcome the dead points in ordinary crank movements, which is effected by means of a rock shaft, in connection with an inclined plane wheel, fly-wheel, and anti-friction rollers.

Claim.—The combination and arrangement of rock shaft A, the inclined plane wheel B, the fly-wheel C, shaft D, and anti-friction rollers *a a*, constructed, arranged, and operating as and for the purpose herein described and set forth.

No. 48,503.—TRUMAN G. BAILEY, Wassiac, N. Y.—*Buckle.*—July 4, 1865.—This invention consists of two jaws, the outer faces of which are bevelled or wedge-shape, together with a tongue or spur which extends across the space between the jaws when in use, and stands in a corresponding hole in the opposite jaw, arranged relatively to a loop or strap and to a strap of malleable cast iron, and a slender steel spring.

Claim.—The jaws C D, with their inclined faces C′ D′, and tongue or spur G, arranged relatively to the enclosing strap B′, and parts B E and F, or their equivalents, substantially in the manner and for the purpose herein set forth.

No. 48,504.—WILLIAM BAILEY, Troy, N. Y.—*Hydrant.*—July 4, 1865.—In this invention a detachable valve chamber is screwed to an ascending water pipe, at the base of the hydrant. The screw valve rod is in line with this pipe, the conical valve being seated at the bottom of the chamber; the flow of water is from the side of this chamber, whence it ascends through a pipe to the place of delivery. The descent of the valve to its lower water seat opens a waste port at the top of the valve chamber.

Claim.—The detachable valve chamber E, with its discharge pipe M, inlet valve-seat and screw opened inlet valve A, in combination with the fixed supply pipe O, united to the said valve chamber by male and female screws N, and arranged in the hydrant box Z, Fig. 4, substantially as herein described.

Also, the valves A and B, and screw C, all fast together, in combination with the stationary screw-nut D, valve chamber E, inlet passage F, discharge pipe M, waste opening I, and valve seats G and J, as herein described.

No. 48,505.—GEORGE BANISTER, Hartford, Vt.—*Socket for Hoe, Chisel, &c.*—July 4, 1865.—A short stout socket or hollow shank is formed on the steel or blade part of the chisel, and then inserted in one end of a cylindrical ferrule or socket, and the two are welded together.

Claim.—The method of forming the shank or stem on the part to which the socket is to be attached, and of uniting it to a sheet-metal band or ferrule, so as to form an additional layer of metal to give the socket an increased thickness and strength near the bottom or smaller part thereof, substantially as herein shown and described.

No. 48,506.—R. B. BAYARD, Philadelphia, Penn.—*Artificial Fuel.*—July 4, 1865.—This invention consists of a composition of petroleum, saw dust, coal dust, and resin, plaster or cement. The composition is placed in suitable moulds and subjected to pressure, so as to form it into blocks.

Claim.—The combination of petroleum or rock oil with vegetable fibre and coal dust in about the proportions herein specified.

No. 48,507.—O. T. BEDELL, New York, N. Y.—*Egg-holder and Packer.*—July 4, 1865.—This invention consists of a plate of India-rubber or other suitable material, having a series of pockets, each of which is capable of holding an egg.

Claim.—An egg-holder and packer produced from a disk or plate A, provided with or without a central hole *a*, and with a series of pockets B, each capable of holding an egg, substantially as herein set forth.

No. 48,508.—JOHN W. BOUGHTON, Appleton, Wis.—*Top for Mucilage Bottle.*—July 4, 1865.—This invention consists of a metallic cylinder, to which is hinged a top having a slot, so that it can be closed over the brush. The top is fastened, when the bottle is closed, by means of a screw and nut. The brush handle passes through a rubber pad, which rests in the mouth of the bottle.

Claim.—The combination of the compressible pad around the brush handle with the pressure cap, substantially as described and for the purposes set forth.

No. 48,509.—HENRY BOTEMLEY, Camden, N. J.—*Lubricating Material for Wool.*—July 4, 1865.—This invention consists in using the secretion extracted from the wool for lubricating, preparatory to its carding and spinning.

Claim.—The use, for lubricating wool, preparatory to carding or spinning the same, of the secretion extracted from the wool.

No. 48,510.—THOMAS BRACHER, New York, N. Y.—*Covering for the Head.*—July 4, 1865.—In this invention a hat or cap of wire cloth is coated with a water-repelling gum or composition; and the exterior covering of cloth being laid upon this, is united thereto by heat and pressure.

Claim.—As a new and improved article of manufacture, a covering for the head, made of open wove wire cloth, combined by adhesion with the material to form the outer surface of the hat, bonnet, &c., substantially as described and for the purposes specified.

No. 48,511.—E. F. BRADFORD and L. L. BARBER, Boston, Mass.—*Sewing Machine.*—July 4, 1865.—This machine is designed for sewing leather, &c., with waxed thread, a single thread being used—a barbed needle from below and an awl working from above; and as neither of these instruments is used for feeding, the needle cannot fail to enter the perforation made by the awl.

Claim.—First, the thread feed in combination with a hook or barb needle, either with or without an awl, substantially as described.

Second, the employment of the feed finger B in combination with a hook needle and awl, substantially as and for the purpose described.

Third, arranging the end of the feed finger B so as to slide and act upon the double-thread or loop within a slot or hole in the sewing plate, and with its upper surface, either just below or flush with the surface of the plate, substantially as and for the purpose described.

Fourth, the combination and arrangement of the finger B with the hook needle F and automatically rising presser foot D, substantially as and for the purpose described.

No. 48,512.—JAMES BREWER, Albany, N. Y.—*Sulky Plough.*—July 4, 1865.—In this invention the rounded end of the plough beam adjusts vertically in the space between two hangers in front of the frame. The rear end of the plough beam moves vertically between two hangers, on which it is pivoted, to turn laterally at its upper end. This hanger is held against the plough beam by a spiral spring, but when the mouldboard of the plough strikes an obstacle, it turns, and the yielding hanger and rounded front end of beam allow it to turn sufficiently to pass an obstacle.

Claim.—First, making one of the standards E E, with the plough beam in its proper position, yielding to a certain degree, for the purpose of permitting the plough to pass obstructions which are in its line, and which are too hard to cut, substantially as and for the purpose specified.

Second, the combination with the plough beam of the rigid standard F, yielding standard E, screw bolt *o*, and spring *p*, substantially as and for the purposes specified.

Third, hanging the plough beam of a sulky plough between two standards in such a manner that the operation of the plough is not affected by the passage of the supporting wheel over rough or uneven ground, as and for the purposes specified.

Fourth, the combination with the plough and its beam G, herein described, of the laterally adjustable caster wheel H, when fastened to the rear of the plough beam, substantially as and for the purposes specified.

Fifth, connecting the hound in the furrow side to the pole by means of a hinge *s*, for the purpose of making it and the furrow wheel adaptable, as and for the purposes specified.

Sixth, the combination with the foot lever L and plough beam G, when capable of rotation within the standards I, of the friction rolls *q*, as and for the purposes specified.

Seventh, in combination with the plough beam G and tongue P the adjustable breast yoke Q, for the purpose of cutting more or less land, as herein described.

No. 48,513.—EDWIN BROWN, Leominster, Mass.—*Breeching Hook for Vehicles.*—July 4, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—First, the construction of a breeching hook by combining with a fixed standard a rigid hook swinging upon said standard, as described, so that the breeching strap shall be released by the displacement of the hook, substantially as herein described

Second, in combination with a fixed standard and movable hook a spring actuating the hook, and located in relation to the hook and standard, as described.

No. 48,514.—D. P. BUTLER, Boston, Mass.—*Dumb Bells.*—July 4, 1865.—This invention makes dumb bells capable of graduation in weight by constructing them of a series of shells, one over the other, which may be removed or added at pleasure.

Claim.—The series of movable shells, held together and to the spindle or handle by a halved joint on each set of shells, and a screw *g*, passing through the centre of each shell and into the spindle, substantially as set forth.

Also, the sectional handle *b*, made in two parts, fitting upon and detachable from a central spindle *a*.

Also, the employment of the rings *k* interposed between the handle and shells for increasing the length of the handle, substantially as set forth.

No. 48,515.—MALCOLM CAMPBELL and JOB H. COLE, Philadelphia, Penn.—*Machine for Boring Wells.*—July 4, 1865.—This invention consists in corrugating the drill stock and lifting cams, where they come in contact with others, so as to render the lift of the drill more certain and efficient.

Claim.—Corrugating or otherwise indenting the contact surfaces of the lifting cam and drill stock, so that the lifting will be positive and without liability to slip, substantially as described.

Also, hanging the lifting cam shafts in adjustable and self-yielding boxes or bearings, as and for the purpose described.

Also, in combination with the drill stock and its lifting cams, the counterpoise P for aiding in raising the drill, when, from its extreme length, it becomes very heavy, and to equalize the force with which it falls, substantially as described.

No. 48,516.—CHARLES F. CHAMBERS, Hutsonville, Ill.—*Machine for Making Sheet-metal Pans.*—July 4, 1865.—This invention is designed as an improvement on a machine patented to the same inventor November 29, 1864, and consists in the employment of two rollers on the same line, instead of one, the inner ends of said rollers being considerably lower than the outer ones, the bending of the sheet by this means being commenced at the middle, and proceeding towards and finishing at each end. Also, in adjusting the blocks or forms relatively to each other to or from the rollers, and in the attachment of the gauge the slide or gate instead of to the table.

Claim.—First, the angling rollers E E′, or their equivalents, placed at any suitable inclination, to press the sheet-metal from the centre outward, as described and set forth.

Second, the set screws *m m′* and *c*, or their equivalents, for throwing the operating forms out of line with the remaining one, substantially as described.

Third, in this composition, the gauge O, when attached to the gate D, for the purpose of regulating the depth of the pans, in the manner set forth.

No. 48,517.—JAMES CHAMBERS, Boston, Mass.—*Pipe Coupling.*—July 4, 1865.—In this invention the coupling is formed of two semi-cylindrical bands of metal which embrace the extremities of the two pipes, and meet each other on opposite sides of the same. The ends of the bands which meet each other are provided with an outwardly projecting dove-tailed rib, and the two sections of the band are tightened upon the pipe by two sliding metal blocks, called keys, which, having each a dove-tailed and slightly wedge-shaped recess, embrace the two ribs, and, being driven up, draw the flanges or ribs together. A recess is formed on the inner surface of the ring to admit of packing.

Claim.—A pipe coupling, composed of two or more sections of a cylinder, having their contiguous edges provided with cleats or tenons *h h*, and fastened by keys F F, provided with dovetail wedge-shaped mortises *m*, or their equivalents, substantially as set forth and for the purpose described.

No. 48,518.—JOHN CHILCOTT, Brooklyn, N. Y.—*Cast-iron Steam Generator.*—July 4, 1865; antedated June 21, 1865.—This invention consists in providing, in a steam generator, a system of cast-iron arch-sided polygonal water and steam tubes, so arranged as to form flues for the passage of the products of combustion, which pass through to the rear and return again to the front before being allowed to pass off to the atmosphere.

Claim.—A steam generator, composed of tiers of arch-sided polygonal cast-iron water and steam tubes, arranged substantially as herein described, to form flues between the tiers.

No. 48,519.—D. M. COCHRAN and A. GEAR, Richmond, Ind.—*Machine for Stacking Straw.*—July 4, 1865.—In this invention a folding stacker is fastened by a tubular journal at its lower end to the winnower. Near the middle it rests on a horizontal rod, extending from two nearly vertical beams of the machine. This rod is vertically adjustable, and when the stacker is lowered below the sides of the separator, their wind boards fall with it, and fill the space between the separator and stacker. There is upon the upper end of the stacker an adjustable deflector to guide the straw to its position.

Claim.—First, the combination of a folding straw stacker, which is constructed of sections, with the hanging posts or beam B, and rod *j*, when these are used for confining and supporting the stacker in transportation or in operation, substantially as herein described.

Second, the combination of the guard or side boards *e′*, of the section D, with an adjustable stacker, and the box A of a threshing machine, substantially as described.

Third, a hinged or pivoted deflector H, applied at the discharging end of the stacker, substantially as described.

Fourth, the hinged apron H′, in combination with a device or devices, for protecting the straw from the wind at its point of discharge from the stacker, substantially as described.

Fifth, a folding sectional stacker, which is susceptible of being elevated or depressed without leaving wind openings at the side of the lowest section, and which is arranged and combined with the rear end of a threshing machine in such manner that it can be folded beneath the same, substantially as described.

No. 48,520.—D. C. COLBY, New York, N. Y.—*Flour Sifter.*—July 4, 1865.—This invention consists of a shaft placed horizontally in a suitable hopper, having curved rubbers upon the shaft, a screen above it, and a concave sieve below; the hopper or box is hung by a rod to a frame, so that it can be tilted over to empty the refuse from the sieve.

Claim.—First, the use of the shaft B, provided with one or more rows of the strips *g g* and *h*, in combination with the box A, and the sieve I, and with or without the screen *m*, substantially as described and for the purposes set forth.

Second, the combination and arrangement of the box A, the standards D D, the rod *k*, and the strips E and F, as and for the purposes set forth.

No. 48,521.—S. J. CONE, Middletown, Conn.—*Chuck for Lathe.*—July 4, 1865.—In this invention a female screw, which is formed by a thread being cut in a cylindrical flange projecting from the face plate, has made to fit into it a thread ring, divided transversely into two parts. The internal surface of this ring is bevelled to fit a circular dovetailed tenon formed on the end of the wooden chuck, upon, and surrounding which said ring is placed; the whole is then screwed into the face plate.

Claim.—The use of the V-shaped split ring D, applied in combination with the head A, and chuck B, in the manner and for the purpose substantially as set forth.

No. 48,522.—D. M. COOK, Mansfield, Ohio.—*Apparatus for Boiling and Evaporating Saccharine Liquids.*—July 4, 1865.—This invention consists in forming an evaporating pan with the bottom in cells or corrugations. Cross ledges with underflow spaces are so arranged that the scum will flow over the top of the ledge, towards the cold end of the pan, while the juice flows through the openings towards the finishing pan. A removable cover is placed on the pan, and two or more pans may be arranged, one above the other, so that the steam from the lower pans will heat the upper pan. A false bottom may be placed on the outside of the corrugated bottom, so that the cells will form tubes or flues.

Claim.—First, the construction of cellular or tubular boilers, substantially in the manner and for the purposes described.

Second, the combination of one or more perforated or imperforated ledges, with cellular or tubular boilers, substantially as and for the purposes described.

Third, constructing a tubular or cellular boiler with finishing cells or chambers, substantially as described.

Fourth, the combination of two or more cellular or tubular boilers, arranged substantially as and for the purposes described.

Fifth, the combination of a lid or cover with a cellular or tubular boiler, substantially as described.

Sixth, the construction of a cellular boiler with a bottom plate C, or its equivalent, substantially as described.

No. 48,523.—WALDO P. CRAIG, Milton, Ky.—*Baling Presses.*—July 4, 1865.—Two slabs with grooved external faces hold the hay to be pressed between them in a tumbling box, the trunnions of which run in slots in the side of the press frame. Doors on the sides of the tumbling box allow clamps to be placed in the grooves of the slabs, to clamp the bale and hold it when sufficiently pressed. The tumbling box can be placed in a vertical position to be filled, and in a horizontal one to apply the pressure.

Claim.—First, the tumbling box H, substantially as described and set forth.

Second, the arrangement of tumbling box or trunk H, trunnions *h*, slots *e*, and abutment E′, substantially as set forth.

Third, the combination of the U-formed clamp irons M M′, tie bars N. N′, and grooved clamp boards or slabs K K′, when constructed and employed as specified.

No. 48,524.—AMOS CRANDALL, Great Bend, Penn.—*Well Drill.*—July 4, 1865.—The object of this invention is to provide an instrument for drilling artesian wells, which will drill and run the well and pump out the sand at the same operation. It also consists of a chisel drill, over which is placed a reamer; above these on the drill shaft are fastened cups or buckets with their mouths upwards, into which the sand settles, until they are full, when the whole may be removed from the well, and the buckets emptied.

Claim.—The combination and arrangement of the drill D, reamer R, shaft S, and buckets B B B, constructed and operating substantially as and for the purpose set forth.

No. 48,525.—Moses G. Crane, Boston, Mass.—*Egg Beater.*—July 4, 1865.—With the rotary shaft of an egg beater two pinions and a sectional gear wheel are combined for the purpose of rotating the beater rapidly in opposite directions alternately.

Claim.—The combination of the rotary spindles A, the series of curved wires or arms *a a a* and *c*, the pinions B and B′, and the sectional gear C, the same being arranged so as to operate together, substantially as described.

No. 48,526.—John W. Currier, Holyoke, Mass.—*Smoothing Iron.*—July 4, 1865.—A separate block to be heated is placed within a case forming a double air space around the block on all sides, except the bottom. The block is easily taken out, quickly heated, and, on account of the air space around it, retains its heat for a long time. The surface of the bottom of the case is thus continually smooth, clean, and hot.

Claim.—The combination of the block A with the parts B C and G in a flat or smoothing iron for the purpose of holding the block A, and forming a double air space around it, substantially as described.

No. 48,527.—Darius Davison, New York, N. Y., assignor to Oliver Davison, Lansingburg, N. Y.—*Cigar.*—July 4, 1865.—This invention consists in forming a wrapper by winding two pieces of leaf in different directions around a forming core. The wrapper is then filled and perforated at both ends.

Claim.—First, forming the wrappers or cases of cigars of two or more distinct pieces wound spirally around the spindle towards the cone-shaped end thereof, in reverse directions, one upon the other, and formed and finished at the cone-shape end, substantially in the manner and for the purposes before described.

Second, combined as a whole, the making, forming, and finishing cigars, substantially as herein described.

No. 48,528.—Frank Dean, Beloit, Wis.—*Corn Planter.*—July 4, 1865.—In this machine the seed gate or cut-off is operated by a cord and ring in combination with an elastic rubber band.

Claim.—The slide A, in combination with the roller F, cone E, and ring H, arranged and operating substantially as described.

No. 48,529.—B. Demming and D'Arcy Porter, Cleveland, Ohio.—*Steam Engine.*—July 4, 1865.—This invention consists in two valves, valve rods, and levers by which they are operated, and a peculiarly formed cam by which they are moved, the object being to move the valves with varying rates of speed through different portions of their stroke.

Claim.—First, the valves C D, when arranged and operating in connection with four ports, in the manner and for the purpose described.

Second, the arrangement of the cam L, and levers H K, in combination with the valves and valve rods, substantially as and for the purpose set forth.

No. 48,530.—Andrew Derrom, Paterson, N. J.—*Trestle Bridge.*—July 4, 1865.—This invention consists in the construction of a bridge, adapted for military purposes, to be made of such timber and trees as may be readily found in the vicinity where the bridge is needed.

Claim.—First, securing the cap-piece to the legs of a trestle to be used for bridges, &c., by means of one or more wedge-shaped pieces driven into the same from the under side thereof, substantially as herein described.

Second, the adjustable feet for the trestle legs arranged upon the same, substantially as herein described and for the purposes specified.

No. 48,531.—Richard James Dewhurst, New York, N. Y.—*Screw-bolt for Fastening Railroad Chairs.*—July 4, 1865.—This invention consists in forming the screw thread on bolts by forging or swaging in proper dies, beginning at the point of the screw, which is turned slowly, as the work of swaging progresses, towards the neck or head.

Claim.—The bolt with the screw part thereof formed substantially as described, as a new article of manufacture.

No. 48,532.—John A. Dickson, Scranton, Penn.—*Coal Breaker.*—July 4, 1865.—In this invention the rollers revolve in opposite directions towards each other, and their faces are made of rings bearing teeth, separated from each other by rings without teeth, the several teeth on the one roller coinciding with and moving in the respective spaces between the teeth of the other.

Claim.—The construction of rings bearing teeth separated from each other by rings without teeth, as above described and for the purposes herein pointed out.

No. 48,533.—Gustave Deiterich, New York, N. Y.—*Hand-washing Device for One-armed Persons.*—July 4, 1865.—In this invention a sponge or other flexible material is attached to the concave side of a reticulated plate, which plate slides into the grooves of a suitable frame screwed to the washstand. This sponge may be soaped and moistened, and the hand and arm passed over it, when it may be removed, with its back plate, to wash the face, neck, &c.

Claim.—First, a rubbing or washing surface composed of a sponge or other suitable porous substance fixed to a frame with an open or perforated bottom, substantially as and for the purpose above described.

Second, in combination, the perforated plate for holding a sponge or other flexible material with a bed plate, upon which it may be fitted by sliding in grooves or otherwise, substantially as described.

No. 48,534.—JOHN DANGLISH, M. D., Reading, England, assignor to STEUBEN T. BACON, of Boston, Mass.—*Machine for the Manufacture of Aerated Bread.*—July 4, 1865.—The escape of gas from dough in the manufacture of aerated bread is lessened by surrounding the dough, during its passage from the mixer to the baking pan, with any suitable aeriform body under a pressure exceeding the ordinary atmospheric pressure.

Claim.—The process or method of operation, substantially as described.

No. 48,535.—JACOB DOBBINS, Litchfield, Mich.—*Hoop Cutting and Bending.*—July 4, 1865.—In this machine are a series of feed rollers, upon which the stock is fed to the revolving circular knives, the axis of one being horizontal, and that of the other inclined, so as to cut one side of the hoop and bevelling. As the hoops are cut they are guided to and between rollers that crimp them to the proper shape for use.

Claim.—The rotating knives G K and guides M M′, in combination with the rollers H N, for bending the hoops as they are cut, all substantially as and for the purpose set forth.

No. 48,536.—WILLIAM C. DODGE, Washington, D. C.—*Metallic Cartridge Case.*—July 4, 1865.—This invention consists in coating a copper or other ductile metallic cartridge case with tin to prevent its oxidation.

Claim.—A cartridge case for small-arms composed of ductile metal, and coated or plated internally, or both internally and externally, with tin or other suitable metal or alloy of metals, substantially as and for the purpose herein set forth.

No. 48,537.—J. P. DORMAN, Galesburg, Ill.—*Clothes Dryer.*—July 4, 1865.—This invention consists of a series of bars arranged parallel and at right angles to one another, with a sufficient distance between each of them to allow the placing of wet or damp clothing on each bar, and retaining the article there without pins; also in securing another set of bars that are in parallel form only to the post or standard, and are detachable at pleasure.

Claim.—First, a series of bars, *a* and *a′*, arranged parallel and at right angles to one another, constituting two or more arms B B, substantially in the manner and for the purpose herein described.

Second, arms B B, upright plate D, bracelet-plates *d d*, and hinged plate *b*, so constructed and arranged as to be readily detached from the post when desired, substantially in the manner and for the purpose described.

No. 48,538.—JOHN W. EASBY, Washington, D. C.—*Machine for Bending Metal Plates.*—July 4, 1865.—This invention consists of a series of bars lying near to each other, side by side, and supported separately by two adjustable screws, one under each end, which pass up through a strong base plate, and are provided with two nuts to bear respectively against the upper and lower surfaces of said plate; and to each of the two outer bars of the series there is attached a clamping bar, which, by means of screws, is made to clamp the plate of metal at both ends down upon the bars.

Claim.—The combination of the patterns E E, adjustable bars C C C, running transversely of the said patterns, the clamps D D, and bed-plate A, all constructed, arranged, and operating in the manner and for the purposes specified.

No. 48,539.—TEMPERANCE P. EDSON, Cambridge, Ill.—*Self-inflator for Raising Sunken Vessels, &c.*—July 4, 1865.—This invention consists of a box; the top and bottom may be made of wood and the sides of some flexible material; it is expanded by springs placed inside. There is an opening into the interior sufficiently large to allow it to fill with air as it is forced open by the springs. An India-rubber tube is applied to the hole corresponding in length to the depth of water into which it is plunged. It is placed in the water in a collapsed state, and when inflated will cause the vessel or article to which it is attached to rise to the surface. The number of inflators used must depend upon the weight to be raised.

Claim.—The herein described inflator when constructed, applied, and operating as and for the purpose set forth.

No. 48,540.—ALFRED EDWARDS, Chicago, Ill.—*Heat Radiator.*—July 4, 1865.—Inside a stove-pipe drum is a smaller cylinder, and in the top and bottom of the drum and by the side of the stove-pipe are tubes opening at one end into the room, and at the other into the cylinder.

Claim.—The combination of the heating chamber D provided with inlet and outlet tubes *b c*, with the cylinder B and circular plate C, arranged and operating as and for the purposes shown and specified.

No. 48,541.—Horace Fenton, Cleveland, Ohio.—*Propelling Wheel for River and Canal Boats.*—July 4, 1865.—This invention relates to that class of wheels which act on the ground or bottom of canals in shoal water, and it consists in the gearing arrangements, arms, and friction rollers, by which the wheel is free to rise and fall, and thus adapt itself to the changes of the depth of the water.

Claim.—The adjustable wheel A, arms E, and slots *g*, in combination with gearings C D and friction rollers when arranged and operating conjointly, substantially as and for the purpose set forth.

No. 48,542.—James H. Flagg, Perkinsville, Vt.—*Corner or Joint for Soapstone Stoves.*—July 4, 1865.—This invention consists of corner pieces for holding the soapstone sides and lining plates together, cast in one piece, and readily put together or taken apart when desired.

Claim.—The corner piece of stoves for holding the sides of the stove and its linings together, cast in one and the same piece, substantially as herein described.

No. 48,543.—Edward A. Floyd, Macomb, Ill.—*Escape Valve for Pumps.*—July 4, 1865.—In order to permit the water to flow out below the freezing line, an exterior slide valve is so arranged as to be held to its seat by a spring, and to be opened by the elevation of a rod, which may be lashed at its upper end, and the escape port thus kept open.

Claim.—The slide D, constructed as shown and described, operated by the stem F and spring *u*, as and for the purpose herein set forth.

No. 48,544.—J. W. Foard, San Francisco, Cal.—*Shoemakers' Float.*—July 4, 1865.—This invention consists in constructing the float so that the cutters are separated from the float and held therein by means of a clamping screw; and further, in making the cutters with double faces.

Claim.—First, constructing shoemakers' floats so that the cutters are separate from the stock, and are held therein by means of a clamping screw, substantially as above described.

Second, making the cutters C with double faces, substantially as described.

No. 48,545.—H. G. Folger, Wadsworth, Ohio.—*Clothes Wringer.*—July 4, 1865.—This invention consists of a combination of devices for clamping the machine to the tub and the other operative parts, as indicated in the claim.

Claim.—The above described arrangement of the adjustable clamps G, levers L, pawls *h*, arm B, end-pieces A, bearings *b*, springs I, and brace D, for the purposes set forth.

No. 48,546.—A. K. Foster, Hallettsville, Texas.—*Saw Gummer.*—July 4, 1865.—This invention consists in the arrangement of an adjustable bar which carries a slide, on a stud in which the saw is pivoted, and an arrangement of levers for working said slide up to an adjustable gauge, and for turning the saw so as to present the teeth in succession to the grinding surface.

Claim.—The grindstone D, with the adjustable bar F, sliding bar H, and with the levers J K, and clamp or jaw L, or their equivalents, all arranged in connection with the saw M, to operate substantially in the manner as and for the purpose herein set forth.

No. 48,547.—Andrew Fulton, Pittsburg, Penn.—*Piston Packing.*—July 4, 1865.—This invention consists in arranging upon a suitably constructed piston, uncut hard and soft metal rings, alternately; the rings being made of wedge form, and placed between the flanges of the piston head in such a manner that, upon screwing the nut upon the end of the rod, the movable flange is forced against the rings, and in consequence of their form the soft ones are extended so as to form a tight joint with the interior of the cylinder.

Claim.—The construction of the packing of a piston so as to operate as herein described, by arranging uncut hard and soft metal rings *b c b c*, of the wedge form, described upon a hub A, and between heads B D, one of which is adjustable lengthwise of the rod C, the said soft and hard metal rings being disposed in the order substantially as described, all for the purpose set forth.

No. 48,548.—Franklin Gleason, Philadelphia, Penn.—*Expanding Drill.*—July 4, 1865.—This invention consists in making a longitudinal slot in the end of the drill shank, and boring the shank from the bottom of said slot, and introducing into it a plate having a shank extending into the said bored hole; upon this shank is a screw nut, arranged so as to draw the plate into or out of the slot in the drill shank. Upon the outer end of the plate, on each side, are inclined grooves in which work pins attached to the expanding cutters, so that by drawing in or shoving out the said plate, the cutters are expanded or otherwise as desired, in a lateral direction in relation to the drill shank.

Claim.—The plate C, provided with the oblique grooves *d*, at opposite sides, fitted within the stock A, and adjusted by means of the nut F, on the screw of the shank *b*, or an equivalent means, in connection with the cutters D D, fitted in the cylindrical part B of the stock, and connected to the plate C by pins *g*, fitting in grooves *d*, substantially as and for the purpose set forth.

No. 48,549.—William Golding, New Orleans, La.—*Steam Engine.*—July 4, 1865.—This invention consists in the application of a radius arm, in combination with a connecting rod, cross-head, and link, connecting said cross-head with the trunk of a trunk engine, for the purpose of making available the radius bar, in preventing the strain upon the sides of the trunk, and enabling the constructer to use a much smaller trunk than usual, thus considerably increasing the effective diameter of the cylinder, without really altering its dimensions.

Claim.—The radius arm G, applied in combination with the connecting rod *b*, cross-head *a*, link F, and trunk E, substantially in the manner and for the purpose herein shown and described.

No. 48,550.—Ebenezer Gordon, Cedar Rapids, Iowa.—*Washing Machine.*—July 4, 1865.—A semicircular frame in the body of the machine supports a number of rollers; a semicircular rubber, whose convex surface corresponds with the concave form of the frame, oscillates over the frame, and is provided with cross-bars, the exterior faces of which are rounded off. At the upper ends of the frame, above the uppermost roller, are blocks with corrugated surfaces which may serve as washboards when the rubber is removed.

Claim.—First, the combination of the supporting frame I, the rollers R, the semicircles F, the rubbing bars G, provided with exterior surfaces, the cross-bar F, the journals *c c*, and slots *a a*, arranged as and for the purposes specified.

Second, the combination and arrangement of the box A B, the removable supporting frame I, the rollers R, corrugated blocks D, rubber E G, and handle H, operating as and for the purposes specified.

No. 48,551.—William Goltry, La Grange, Iowa.—*Field Marker for Planting.*—July 4, 1865.—This invention consists of a series of marking runners, with a fixed bar, and an operating handle or lever, for the purpose of controlling and changing with facility their direction.

Claim.—The combination of two or more runners or markers A A with each other, and with the connecting bars B and C, by means of pivot pin *c c'*, substantially in the manner and for the purpose herein set forth.

Also, in combination with the pivoted markers A A, and connecting levers B C, the lever D, pivoted to the bar B, and operating substantially as herein described.

No. 48,552.—Stuart Gwynn, New York, N. Y.—*Coating for Oil Vessels.*—July 4, 1865.—A coating consisting of a solution of dextrine, with or without admixture of glucose, or glycerine, is applied to the vessel, and the drying accelerated by artificial heat.

Claim.—The new article of manufacture constituting a tight oil vessel, lined or coated internally as described.

No. 48,553.—William Smith Hall, Quincy, Mass.—*Railway Car.*—July 4, 1865.—The object of this invention is to facilitate the starting of street cars, by means of a mechanism that is under the control of the driver, and operating upon the wheels of the car.

Caim.—The employment of the ratchet mechanism, when operated to start the car, by a chain winding upon a crank shaft or pulley, substantially as set forth.

Also, the method of disengaging the pawl from the ratchet, substantially as shown.

Also, combining with the starting apparatus a brake mechanism, operated by foot, substantially as shown and described.

No. 58,554.—Charles W. Harris, Philadelphia, Penn.—*Box, Ship, or Mast Scraper*—July 4, 1865.—This invention consists in making the box or mast scraper of a concave form, having three casting edges, and of simple construction.

Claim.—Constructing a box scraper of the form substantially as described.

No. 48,555.—William H. Hart, New Britain, Conn.—*Door Bolt.*—July 4, 1865.—This invention consists in stamping out the barrel from sheet metal in one piece, having projections that pass through corresponding openings in the plate, and riveting them fast thereto, the barrel being rolled up to the proper shape after being stamped.

Claim.—Making the barrel of a door or shutter bolt of one piece of sheet metal, punched, formed and secured to the plate *d*, substantially as described.

No. 48,556.—G. H. Henkle, Middletown, Ohio.—*Graduated Faucet Measure.*—July 4, 1865.—A cylindrical measuring vessel is so connected with a faucet that when it is in a horizontal position the liquid flows in a direct course from the cask into it, and when raised to a perpendicular position the liquid descends into the vessel in which it is to be drawn. The quantity is determined by the position of a packed piston within the measuring cylinder, as indicated by a solid rod connected with one side of said piston, a tubular piston rod on the upper side of the horizontal cylinder serving also to indicate when the graduated measure is full.

Claim.—First, the frame D E B, in combination with the measure A, arranged and operating in the manner and for the purpose substantially as described.

Second, the faucet constructed in the manner described, in combination with the measure A, to operate in the manner and for the purpose described.

No. 48,557.—R. HOFFHEINS, Dover, Penn.—*Combined Rake and Reel Attachment to Harvesters.*—July 4, 1865.—The object of this invention is to obtain a rake and reel combined in such a manner that the motion of each is independent of the other, and that the former can be stopped and started at will by the attendant. This is secured by hinging the rake to a cogged wheel and ring, both of which are fitted loosely about the tubular support of the shaft, which carries or drives the reel, and the former of which is actuated by a clutch gear wheel under the control of the driver. The whole apparatus is driven directly from the main axle by a tumbling shaft, and is mounted upon a hinged cutting apparatus, which is supported by a curved hinged frame.

Claim.—First, constructing a combined rake and reel, so that the rake is independent in its revolutions of the reel, upon a support which is mounted upon the hinged cutting apparatus of harvesting machines, substantially as herein described.

Second, the construction of the support H, for the combined rake and reel, substantially as described.

Third, securing the required motions for the rake by connecting it to a revolving ring or yoke or coupling, and to a revolving wheel J, which are arranged in different planes, and applied to a central shaft or axial support, substantially as described.

Fourth, the manner substantially as described of connecting the rake to its driving wheel J by means of a spring bar, or its equivalent, for the purpose set forth.

Fifth, the arrangement of the four gear wheels J *q p p'* with the combined but independently revolving rake and reel, substantially as herein described.

Sixth, in a rake and reel combined, the rake revolving, independently of the reel, around the axis of the shaft which carries or drives the reel; providing for stopping and starting the rake without disturbing the reel, and without stopping the machine or harvester, substantially in the manner herein described.

Seventh, the combination of the driver's seat of the harvester, independently revolving rake, independently revolving reel, and stopping and starting contrivance of the rake, substantially in the manner and for the purpose described.

Eighth, the combination of the extensible and flexible or jointed shaft S, independent rake, and independent reel, substantially in the manner and for the purpose described.

Ninth, connecting a rake, which turns around the shaft L, to opposite sides of a revolving device *k*, which serves as a hinge, on two sides of the shaft L, for the rake to play up and down upon, and also as a coupling, which permits the rake to revolve independently of the reel, substantially as herein described.

Tenth, the combination of an independently revolving rake, an independently revolving reel, sliding clutch wheel *q*, or its equivalent, and the hinging or coupling device *k'*, or its equivalent, substantially as and for the purpose herein described.

Eleventh, a rake which revolves or turns independently of the reel around the shaft L, which drives or carries the reel during its entire circuit, substantially as and for the purpose described.

Twelfth, the arrangement, with an independently revolving rake and an independently revolving reel, of a contrivance for stopping and starting the rake without stopping the reel, substantially as described.

Thirteenth, constructing a combined rake and reel in such manner that the rake and reel have independent motions of one another, although the rake moves around the shaft which carries or drives the reel, substantially as described.

Fourteenth, an independent revolving reel, mounted upon a hinged cutting apparatus of a harvester, in combination with a revolving rake, substantially as described.

Fifteenth, the arrangement in a harvester of the independent reel, independent rake, hinged cutting apparatus, and stopping and starting apparatus, substantially as described.

Sixteenth, an independent reel and an independent rake combined, both moving in a similar direction, but in different paths, about a common axis or shaft, substantially as herein described.

Seventeenth, the combination of an independent revolving rake, which is sustained at only one end, with an independent revolving reel or gatherer, which is also sustained at only one end, in such manner that the rake always maintains a position below the reel, substantially as described.

Eighteenth, the combination with a harvesting machine constructed with two driving wheels, a jointed cutting apparatus, an independently revolving rake, and an independently revolving reel—the reel and rake being mounted on the cutting apparatus—of an adjusting contrivance, which is so arranged that the driver, while riding on the machine, can adjust the cutting apparatus and the rake and reel without stopping the machine, substantially as described.

Nineteenth, the combination of a hinged curved frame, hinged cutting apparatus, independent revolving rake, and independent revolving reel, substantially as described.

Twentieth, the arrangement of the independently revolving rake and independently revolving reel upon a jointed cutting apparatus at a point forward of the axle *a*, and to one side of the drive wheel A1, substantially as and for the purpose described.

Twenty-first, the arrangement, in a two-wheel harvesting machine, of a hinged supporting frame C, a jointed cutting apparatus, a revolving reel or gatherer, and a rake, with attach-

ments or connections by which the attendant of the machine, while riding thereon, can control its motions, substantially as herein described.

Twenty-second, combining a rake and reel or gatherer in such manner that the former revolves around the axis of the latter, and also independently of it, and can be stopped and started at the will of the operator while he is riding upon the machine, substantially as described.

No. 48,558.—ABRAHAM HUFFER and NATHANIEL SEHNER, Hagerstown, Md.—*Padlock.*—July 4, 1865.—In this lock the bolt which locks the hasp is itself locked by an auxiliary bolt, besides being otherwise fastened by a fixed stub, which catches in a notch in its side, the bolt being raised up for that purpose by a spring. The main key serves simply to operate the auxiliary bolt, the first or principal bolt being operated by an arm projecting from the shaft, which carries on its outer end the key hole cover.

Claim.—First, a padlock provided with two bolts, one being employed to bolt the hasp, while the other fastens the first bolt, all constructed and arranged substantially in the manner and for the purposes set forth.

Second, the use of the notch, *b* in combination with the staple S and spring C and D, substantially in the manner and for the purposes set forth.

Third, the use of the hasp, or its equivalent, for moving the bolt laterally into the range of the key, substantially as specified.

No. 48,559.—DAVID H. KAUFMAN, Kokoma, Ind.—*Apparatus for Separating Grease from Slush.*—July 4, 1865.—This invention consists of a tank for receiving the slush from the rendering tank. The said tank is provided with an adjustable gate, bearing against the rubber packing in front of the spring; the gate is adjusted by means of the crank, pinion, and rack. In front of the gate is an inclined grate, beneath which is an inclined board. The slush, flowing upon the grate from the tank, passes through the grate, any solid pieces of fat being retained thereby. The slush flows from the inclined board into a compartment of the tank below. The water passes into the compartment through the aperture, and the grease collects on the surface of the water in the compartment.

Claim.—The combined apparatus shown and described, consisting of the upper vat, with its adjusting gate, the grated incline, and the divided vat I L, with their communicating opening.

Also, the vat, with its respective chambers I L, communicating at or near the bottom so as to act as a separator by allowing the lower or watery fluid to pass out of the chamber, which retains the grease.

No. 48,560.—JOHN C. JEWELL, Boston, Mass.—*Forging Machine.*—July 4, 1865.—This invention will be understood by reference to the claim and engravings.

Claim.—First, the stop K, when arranged in connection with the hammers G, to operate in the manner substantially as and for the purpose herein set forth.

Second, the knife or cutter R, when arranged so as to be operated from the shaft T, substantially as described.

Third, the ratchet Y′, provided with the bevelled projections *n*, and used in connnection with the pin *o*, on the hub *p* of arbor C, in combination with the sliding bar Y, provided with the button *u* and fork X′, the pawl *v*, the bar W, connected with shaft T, and the cam X on arbor C, all arranged substantially as shown for the purpose specified.

Fourth, the horizontal movable or turning bed A′, with sliding trough B′ attached, operated from the rock shaft O, through the medium of the obliquely slotted plate *i′*, rod D′, arranged substantially as and for the purpose set forth.

Fifth, the manner of operating the trough B′ for feeding the rod to the hammers, to wit: by means of the rack C′ attached to the slide *b′*, the pinion *d* gearing into rack *c′*, and the ratchet *e′*, into which a pawl *f′*, attached to lever C′, catches, the lever C′ being actuated from the rock shaft O, and all arranged substantially as described.

No. 48,561.—JOHN KEANE, New York, N. Y.—*Laundry Water Heater.*—July 4, 1865.—This invention consists of a wooden tub or tank, in which the water to be boiled is placed. The tank has connected with it, by means of double tubes, a closed metallic boiler in the shape of an "oblate spheroid." This boiler is placed over a hole in the top of the stove, and when the water begins to boil a circulation of the water takes place through the tubes above mentioned, and by these means all the water is passed through the boiler, and thus heated.

Claim.—First, in water-heating apparatus, connecting the branch pipes E F, which lead to the tub B, with the pipes G and L, which convey the water to the fire by means of a horizontal pipe D, which is divided by a diaphragm, as shown, and in whose ends the pipes G and L are capable of turning, substantially as and for the purpose above described.

Second, the combination with boiler H and the circulating pipes G and L of a plate K, whereby the boiler can be used with a cooking stove or range, substantially as above described.

Third, combining the water-heating apparatus above described with a tub or other vessel B for laundry or culinary uses, substantially as above described.

No. 48,562.—Clement H. Kellogg, Elyria, Ohio.—*Hand Corn Planter.*—July 4, 1865.—In this machine a seed slide, by compressing the sides of the planter, carries the seed from the seed box to a seed distributor, composed of a block perforated with several holes, converging and uniting in one upon the upper side; after passing this seeding block, the seed passes through several inserters into the ground.

Claim.—The seed distributor A having apertures *c c c* converging from opposite directions, upward and diagonally to one common point of intersection, and thence upward perpendicularly to the upper surface of the block, in combination with sliding stop D and seeding slide B, the whole being arranged in the manner substantially as described, and for the purpose of inserting the seed in two or more places in the soil.

No. 48,563.—Wm. H. King, Philadelphia, Penn.—*Oscillating Engine.*—July 4, 1865.—This invention consists in the arrangement of the channels through the trunnion and the steam chest relatively to the trunnion and cylinder, and the construction and arrangement of the valve gear.

Claim.—First, the arrangement of the channel S S′ and T through the trunnion H, substantially in the manner described and shown.

Second, arranging the steam chest relatively to the trunnion H and cylinder A, substantially as set forth.

Third, the construction and arrangement of the valve gear hereinbefore described, in combination with the steam chest, substantially as herein set forth.

No. 48,564.—Charles Korff, New York, N. Y.—*Artificial Fuel.*—July 4, 1865.—This invention consists of one ton of coal dust, one gallon of blood, and one gallon of water, pressed into moulds and dried.

Claim.—The production of artificial coal out of mineral coal dust by combining the same with animal blood and water, substantially in the manner and for the purpose above described.

No. 48,565.—Frederick Koth, New York, N. Y.—*Piano Forte Action.*—July 4, 1865.—This invention consists in the arrangement of a second jack on the key lever acting upon the hammer butt to hold the hammer near the spring, thus allowing the usual jack to pass readily at the least motion of the key under the hammer butt, and produce a repetition of blows by a very slight rise of the end of the key.

Claim.—The arrangement of the jack G, lever H, spring S, and stop *n* attached to the key A in combination with the adjustable stop N, and operating on the hammer butt in the manner and for the purpose substantially as described.

No. 48,566.—Casper Krogh, Kroghville, Wis.—*Seeding Machine.*—July 4, 1865.—In this machine the distributing board underneath the hopper is adjustable on side pieces running in slots.

Claim.—The arrangement of the adjustable corrugated apron H beneath the hopper of a grain drill, substantially as and for the purposes herein shown and specified.

No. 48,567.—H. A. Lamb, Portland, Me.—*Medicine for the Cure of Erysipelas.*—July 4, 1865.—This invention consists of a composition of lard, sulphate of iron, and oil of bergamot.

Claim.—The compound of ingredients mixed in the proportions and for the purpose described.

No. 48,568.—Gustave Lautenschlager, New York, N. Y.—*Paper File.*—July 4, 1865.—This invention consists in the application to a central stem or axis of a series of looped wires, in combination with a folding frame in such a manner that each wire is capable of receiving and holding its own paper, and all the wires swivel on the central stem, so that they will fold one over the other when the frame is closed. The papers are placed one above the other in a convenient position for the reader. Each paper can be conveniently removed without disturbing the others, and furthermore, the papers are not injured or torn by passing needles through them or by points or other devices generally employed in paper files of the ordinary construction.

Claim.—The application of a series of folding wires *b* to a common rod A in combination with a suitable frame B, constructed and operating substantially as and for the purpose set forth.

No. 48,569.—B. S. Lawson, New York, N. Y.—*Buckle.*—July 4, 1865.—This invention consists in placing the journals of the tongue in openings in the frame of the buckle so that the journals can be shifted from their bearings, and in so constructing the buckle that its tongue can be loosened from the strap by lifting the rear end of the buckle.

Claim.—First, in buckles for fastening skates and for other uses, placing the journals of the tongue in openings in the frame of the buckle of such form as that said journals can be shifted from their bearings, substantially as described.

Second, so constructing a buckle as that its tongue can be loosened from the strap by lifting the hinder end of the buckle, substantially as described.

No. 48,570.—David Lippy, Mansfield, Ohio.—*Fruit Dryer.*—July 4, 1865.—The furnace extends the whole length of the lower part of the dryer, but is of less width, leaving a space on either side. A little above the furnace, and equal to the area of its top, is a horizontal plate; a little above this is another of much greater area, but leaving spaces at either side; along its centre are apertures and registers. In the upper part of the dryer are series of drawers with slotted bottoms; between the sides and walls of the dryer, and in the middle between the drawers, are spaces with registers; in the ceiling are apertures and registers, and in the gable or roof, perforations.

Claim.—First, a series of drawers F provided with slatted bottoms *c* and dampers C, and arranged with dampers H at their sides, substantially as and for the purpose specified.

Second, the furnace B having two plates C D above it, one of which D is provided with a register E, all being arranged in connection with the drawers and dampers, to operate as and for the purpose set forth.

Third, the ventilators I applied to the building A, and used in connection with the furnace drawers and dampers, substantially as and for the purpose set forth.

Fourth, the combination of the furnace drawers, dampers, and ventilators, all arranged within a building, to operate in the manner substantially as and for the purpose described.

No. 48,571.—Harvey Locke, Boston, Mass.—*Flour Sifter.*—July 4, 1865.—This invention consists in arranging the wings or curved bars attached to the radial arms of a horizontal shaft to scrape the concave surface of the sieve to force the flour through the meshes.

Claim.—The improved sifting apparatus, having its wings or scrapers G G constructed and applied to the arms *b b b b* and so as to operate with the sieve, in the manner as set forth.

No. 48,572.—S. C. Maine, Boston, Mass.—*Flour Sifter.*—July 4, 1865.—This invention consists of a sifting cylinder composed of independent sections placed one within the other, and operated by a shaft, so that as the shaft is turned, they are brought together, forming an entire cylinder. There is also a cover operated by the shaft to prevent the dust arising from the sieve.

Claim.—A sifter cylinder, composed of independent sections or parts, placed one within the other, and operating substantially as and for the purpose set forth.

Also, in combination with the above, the cover E, operating substantially as set forth and for the purpose described.

No. 48,573.—Sylvester Marsh, Chicago, Ill.—*Grain Dryer.*—July 4, 1865.—The claim, with the engraving, fully explains this invention.

Claim.—First, the general construction and arrangement of the grain-drying apparatus, substantially as herein described; that is to say, forming the grain receivers or chambers of a cylindrico-conical form, in combination with central induct and eduction pipes, arranged circumferentially in the manner and for the purpose set forth.

Second, in combination with cylindro-conical grain receivers or chambers, forming the underside of covering plates, to equally distribute the grain and insure its uniform discharge through the pipes.

Third, the arrangement of the central column or radiator or smoke-stack, in combination with concentric drying chambers and enclosures, operating substantially in the manner and for the purpose set forth.

Fourth, the combination of the discharge pipes or openings, with hinged valve traps, arranged for operation in the manner and for the purpose set forth.

Fifth, the method herein described of regulating the temperature of the ascending currents by means of a blast of air down upon the furnace, substantially in the manner and for the purpose set forth.

No. 48,574.—Angus McDonald, Mattawan, Mich.—*Endless Chain Propeller.*—July 4, 1865.—This invention consists in the employment of endless chains of buckets, peculiarly constructed, and arranged to work over the ends of arms attached to rotating shafts, whereby a very durable propeller is obtained, especially for boats of light draught.

Claim.—First, as an improvement in propellers the combination of the twisted wire links D E, buckets F, and thimbles G, as and for the purposes specified.

Second, the connecting of the links D E of said chains together by means of the eyes *c*, protected by metal strips *d*, and the metal bars composed of the parts *f g*, as set forth.

Third, the arms B provided with chains H at their ends, having projections *h*, in connection with the thimble G, in the links E of the chains, substantially as and for the purpose specified.

No. 48,575.—H. S. Mead, Gloversville, N. Y.—*Cultivator.*—July 4, 1865.—In this invention two rotating shafts, armed with teeth, are fastened obliquely to the line of draught in metallic hangers. The shafts are rotated by a band passing over a pulley made fast to the draught axle.

Claim.—The oblique rotating toothed shaft F, fitted at the lower ends of pendants attached to the frame A of the machine, and arranged to operate in the manner substantially as and for the purpose herein set forth.

No. 48,576.—S. P. Mecay, Kilborn, Ohio.—*Washing Machine.*—July 4, 1865.—This invention consists in the employment of a spring, in combination with a head provided with an arm, which is connected with the spring and a lever, whereby the clothes are washed.

Claim.—The spring H connected to the slides G, in which the ends of the shaft F are fitted, in combination with the link E and arm D of the head C, all being arranged substantially as shown, with a lever J, or its equivalent, for operating the head, for the purpose set forth.

No. 48,577.—Truman Merriam and James Cushing, Waterloo Village, Wis.—*Rotary Engine.*—July 4, 1865.—This invention consists in the arrangement of the cylinder and pistons upon a revolving shaft or drum, and of the parts which are adapted to circular apertures in a stationary steam chest. It also consists in the combination of semicircular disks, and the trucks placed upon the crossheads, by which the pistons of the cylinder are guided, and which cause the engine as a whole to rotate. The steam chest is so arranged upon or around the axis of the engine that it can be rotated to a certain extent, and then the motion of the engine be reversed.

Claim.—First, the arrangement of the cylinders and pistons upon a revolving drum on a shaft, in combination with a face-plate and ports, and adapted to circular apertures in a stationary steam chest, so that a constant pressure of active steam may be alternately applied to the piston, thereby increasing the leverage and speed, as herein set forth and described.

Second, the two semicircles, in combination with friction trucks on a cross head, by which, in connection with the movement of a common piston, rotary motion and power are obtained, as herein set forth and described.

Third, the steam chest, with an oscillating joint, in such a peculiar arrangement and adaptation to a face-plate as will admit steam to cylinders and permit the chest to revolve one quarter, and thereby reverse the motion of the engine, as herein set forth and described.

No. 48,578.—Samuel J. Miller, Albert B. Barnett, and William H. Study.—Economy, Ind.—*Apparatus for Liming Hides.*—July 4, 1865.—This invention consists of a shaft, having its bearing in a sliding frame, which can be raised or lowered by means of racks. To the shafts are attached circular disks, to which are attached hooks, and to the latter the hides are suspended. The disk is made in two parts, so that it can be removed from the shaft when necessary. These disks are so arranged that they can be secured at any place upon the shaft, so that hides of any size may be attached to them.

Claim.—First, the employment of rotating hide racks in the process of liming hides, substantially as described.

Second, applying hide racks to a shaft in such manner that they can be adjusted and set at different distances apart to adapt them to hides of varying sizes, substantially as described.

Third, the use of rotating hide racks, in conjunction with a supporting frame, which is susceptible of being elevated or depressed, substantially as described.

Fourth, a liming vat, which is constructed with a concave bottom and provided with hide racks, substantially as described.

No. 48,579.—William Miller, Cincinnati, Ohio.—*Hoisting Machine.*—July 4, 1865.—A platform, provided with rollers at its bottom, rests upon a large worm wheel which meshes equally into two vertical worm racks or segmental screws. Motion is imparted to the worm wheel by a small gear wheel gearing with a toothed rack on the lower surface of the worm wheel.

Claim.—First, an elevator platform having a single worm wheel F, which meshes within two or more opposite worm racks B B, substantially as set forth.

Second, an elevator platform supported by rollers G, or their equivalents, on a single worm wheel F resting in worm racks B B, substantially as set forth.

No. 48,580.—Thomas Moore, Bloomington, Ill.—*Process for Making Sugar.*—July 4, 1865.—This invention consists in mixing with the cane juice white oak bark, and heating gradually to 200° F. The heat is then shut off and the juice allowed to stand for ten minutes, and the scum removed; the juice is then treated with a weak lye of wood ashes, allowed to stand for ten minutes and strained through flannel, after which it is evaporated and crystallized.

Claim.—The within described process of treating saccharine juices and sirups of the sorgho and imphee canes, by first treating the juice with a tannate made of white oak bark, or other equivalent, while cold, and raising it to a certain point by a gradual heat, for the purpose of rendering insoluble, in order to remove certain glutinous or starchy matters contained therein, then mixing with it a weak ley for further defecation, then boiling to the point of crystallization, substantially in the manner set forth.

Also, distinctly the use of a liquor made of oak bark, or other equivalent material, in connection with a ley of wood ashes, or other equivalent, as an effectual agent for the defecation of sorgho and imphee juices and sirups, substantially as and for the purposes specified.

No. 48,581.—Jason C. Osgood, Troy, N. Y.—*Excavator.*—July 4, 1865.—This invention is designed as an improvement on the "Carmichael and Osgood Excavator," used for removing obstructions from harbors, rivers, &c. It will be understood by reference to the claim and engraving.

Claim.—The combination of the toothed chain friction wheel C with the friction wheel F, the belt chain and toothed wheel B, and toothed sheave wheel A, for the purposes as herein set forth.

No. 48,582.—CHARLES H. PARKER and GRINDLY BURNHAM, Waltham, Mass.—*Dust Pan and Brush.*—July 4, 1865.—This invention consists in the combination of a dust pan and brush, the latter being inserted in the handle of the former, which is made hollow and sufficiently large to receive it.

Claim.—A dust pan and brush combined, substantially in the manner herein shown and described.

No. 48,583.—DAVID PARKHURST, Gloucester, Mass.—*Paint for Ships' Bottoms.*—July 4, 1865.—This invention consists of a composition of tar oil, vegetable tar, oxide of iron, and arsenical oxide of copper.

Claim.—The compositions prepared substantially as hereinbefore set forth and for the purpose specified.

No. 48,584.—GEORGE T. PARRY and WILLIAM S. WARNER, Philadelphia, Penn.—*Apparatus for Heating Oil Wells by Electricity.*—July 4, 1865.—Two copper rings, one above the other and connected by platina wires, are placed within a closed chamber around the bottom of the tube. Electricity being conducted to the upper ring, the same passes slowly to the lower ring, as the platina wires are inferior in their conducting power, and thus become red hot, communicating their heat to the tube and oil. The electricity passes off into the ground.

Claim.—First, employing the heating power of electricity for the purpose of liquefying and accelerating the flow of oil from oil wells, substantially as described.

Second, enclosing the circuit interrupter or electrical heater within a tight chamber, substantially as herein described.

No. 48,585.—JOHN M. PERKINS and MARK W. HOUSE, Cleveland, Ohio.—*Oil Can.*—July 4, 1865.—This invention consists in substituting a series of tubes, made of corrugated metal plates, for wire-gauze, as a safety screen to prevent the flame from communicating with the contents of the oil cans through the spout.

Claim.—Forming passages with corrugated metal plate or plates, substantially as described and for the purpose set forth.

No. 48,586.—WILLIAM R. PHELPS, New York, N. Y.—*Head-Rest for Railroad Car Seats.*—July 4, 1865.—A cushion is attached to a frame sliding in another light frame, the upper end of which latter is curved so as to clamp the back of the seat. The first frame may be slid up or down to suit the traveller, who in reclining holds the frame firmly against the back of the seat.

Claim.—The improved head-rest herein described, to be attached to car seats, &c., the same consisting of a movable and adjustable head-rest frame, in combination with a frame susceptible of being attached to or removed from the seat at pleasure, arranged and operating together substantially as specified.

No. 48,587.—JOHN EDWARD PHILIPS, Philadelphia, Penn.—*Broom or Brush Head.*—July 4, 1865.—The broom or brush head is made by aggregating and confining numerous strands of fibrous or other suitable material, so as to make a mass or body whose unconfined ends make the wearing surface of the article.

Claim.—The metal frame A, as shown in Fig. 2, whether moulded and cast in one piece of metal or stamped and pressed in one piece of sheet metal, having bars, on two or more of which the loops *c c* are formed to receive the handle and thereby clamp the filling, as and for the purposes described.

Also, the spring metal confiner D, or its equivalent, made as described, and to be placed on the filling below the frame, as and for the purpose described.

No. 48,588.—LOUIS POH, Buffalo, N. Y.—*Beer Faucet.*—July 4, 1865.—The claim and engraving fully explain this invention.

Claim.—The combination of the key C, plunger C′, plunger barrel E, and discharge nozzle B, when arranged and operating in the manner and for the purposes described.

No. 48,589.—JOSEPH POLLAK, Chicago, Ill.—*Machine for Printing Checks.*—July 4, 1865.—Two or more metal wheels, on the circumference of which numerals are raised, are placed side by side on different axles, which slide one within another. An inking roller passes over the wheels automatically every time a check holder is passed in to press a check against the wheels, which latter are adjustable and are held in place by springs.

Claim.—The device for printing numbers on checks, as herein described, which can be constructed so that it may be attached to scales, or otherwise, where such printing is required.

No. 48,590.—O. M. Pond, Independence, Iowa.—*Seeding Machine and Cultivator Combined.*—July 4, 1865.—In this invention the drag bars are so arranged upon two parallel bars that either can be elevated separately, and by raising the middle one all are raised. The tongue has a pivot joint, and by fastening it at different angles with a pin the depth of the furrow is regulated.

Claim.—First, the arrangement of described devices for jointing the tongue and reach together, and securing said joint in place as may be required in raising and lowering said tongue and reach, in combination with the cultivator apparatus, in the manner and for the purposes set forth.

Second, hinging the beams of the cultivator teeth to the rod J, as described, in combination with the bar K, when the said bar is attached as set forth, and operating as and for the purpose herein specified.

No. 48,591.—Nathaniel Potter, East Hamburg, N. Y.—*Machine for Scraping Roads and Clearing Gutters.*—July 4, 1865.—Scrapers are pivoted to each side of the frame so that they may be used, according to the position given to them, either to smooth the road or scrape the gutters, or, in combination with adjustable shovels on the forward part of the frame, to fill ruts in roads.

Claim.—The manner of constructing the scrapers, as described, so that they may be used either for clearing gutters at the sides of roads, or for smoothing roads and filling ruts, in combination with the cutters attached to the centre piece, and other portions of the machine necessary for the purpose specified.

No. 48,592.—Fitch Raymond and August Miller, Cleveland, Ohio.—*Hood for Cook Stoves.*—July 4, 1865.—A hood, covering the top of the cooking stove, is made to slide on the stove-pipe. When down upon the stove the heat may be passed through this hood by shutting a damper in the stove-pipe. The hood then serves as a bake oven, and carries off all the steam and odors from the cooking.

Claim.—First, hinging the sections A and B together in the manner described, when used in their relation to the stove E, stove-pipe C, tubes *d d'*, and valve *e*, as and for the purpose set forth.

Second, the adjustable cap A, troughs D, and rods H, in combination with the valve *e* and opening *d*, as and for the purpose set forth.

No. 48,593.—Charles G. Sargent, Graniteville, Mass.—*Fan Blower.*—July 4, 1865.—In this invention the frame in which the wheel revolves consists of a shallow cylinder with a conical extension, into which extension the air is drawn by a series of revolving blades inclined to the axis of the shaft on which they are placed, and narrowing to suit the conical form of the case; the rear part of said case forming a bearing for the shaft has a series of stationary arms, to act as cut-offs and directors to the blast of air.

Claim.—In combination with a fan-case substantially such as described, a series of fan wings or blades, inclining outward and backward, and revolving in said case, in the manner and for the purpose substantially as described.

Also, in combination with the inclined wings or blades of a revolving fan, substantially such as herein described, the stationary inclined arms or vanes in the fan-case, for the purpose substantially as described.

No. 48,594.—Erhard Schlenker, Buffalo, N. Y.—*Bolt Cutter.*—July 4, 1865.—In this device the circular cutter holder or hub is supported and partly enclosed by a thick ring with inwardly projecting flanges at the edges. The inner surface of this ring is divided into three sections, each of equal eccentricity to the hub, and against which the outer ends of the cutters abut, and the improvement consists in their adjustment to or from the centre by rotating the hub in the proper direction by means of a handle attached thereto, the extent of whose motion is controlled by an adjustable stop formed by a set screw passing through an arm projecting from the standard on which the tool is supported.

Claim.—A bolt cutter, with the die carrying disk D and handle C attached, when all are combined, arranged, and operated as and for the purposes specified.

No. 48,595.—Theron Sherry, Newark, N. J.—*Basket.*—July 4, 1865.—This invention consists in forming the basket in parts, and so joining those parts, that when not in use they can be folded together convenient for carriage or storage.

Claim.—Folding baskets, constructed in the manner and for the purpose herein set forth.

No. 48,596.—Hamilton E. Smith, Cincinnati, Ohio.—*Washing Machine.*—July 4, 1865.—This invention consists in the combination of the cover, which is flexible, and capable of being used as a hand washboard; also in the method of constructing the perforated rotary dasher.

Claim.—First, the combined cover and washboard G, constructed and applied as herein specified.

Second, the combination of the heads B B, slots C, ribs D, rods E, and water passages *b c c'* arranged and operating as set forth.

No. 48,597.—Basil Spencer, Lewisburg, Penn.—*Straw Cutter.*—July 4, 1865.—This invention consists in an arrangement of devices for feeding hay to the machine, and will be understood by reference to the claim and engraving.

Claim.—The arrangement and combination of the bars F with their pitman K, crank shafts I and J, as connected with the rake head L, and feeding rollers M, and arm V, and operating lever W, when arranged and combined as herein described and for the purposes set forth.

No. 48,598.—O. W. Stowe, Plantsville, Conn.—*Sausage Filler.*—July 4, 1865.—This invention consists in the case being in the form of a portion of a sphere and a cone, and a rotary slotted disk, in or through which the piston works, the disk rotating in an oblique plane in the hopper, all so arranged as to force the meat into the skins.

Claim.—The case A, composed of a section of a hollow sphere *a*, or of the suitable form, and a cone *b*, in connection with a slotted disk D placed obliquely on the shaft B, and a piston C, all arranged to operate in the manner substantially as and for the purpose herein set forth.

No. 48,599.—Samuel Swartz, Buffalo, N. Y.—*Packing for Artesian Wells.*—July 4, 1865.—In this invention the packing around the pump consists of a duplex cylinder of leather or other elastic material, to be dilated by a series of wedges from below, having their attachments in a metal ring, each wedge having a spiral spring between a shoulder on said wedge and the ring below. Two rods secured in the ring below pass up through a similar ring above the packing, where a chain or cord attached to them passes around pulleys on ears ascending from the upper ring, which chains or cords, as well as the rods, pass to a lifting apparatus at the top of the well. When the packing is at rest in the well, the superincumbent water dilates it by pressing it upon the wedges; when the chain or cord is drawn towards the surface, the first effect is to withdraw the packing from the wedges, and thus permit its collapse, and the second, to elevate the whole apparatus out of the well.

Claim.—First, the spring packing and wedges, when constructed and arranged substantially as herein set forth.

Second, the wedges, in combination with the spiral springs and lower ring, for the purpose set forth.

Third, the chain or its equivalent connected with the rod and pulley, as arranged with an adjustable packing, substantially as shown and described.

No. 48,600.—J. B. Sweetland, Pontiac, Mich.—*Horse-power.*—July 4, 1865.—On the under side of the horizontal master-wheel of this machine are pins, provided with small friction rollers which work in between spiral threads upon a horizontal shaft, thus giving a rotary motion to the shaft.

Claim.—The arrangement of the triangular frame A, the metallic bed plate E and F, the master-wheel C, and the shaft D, the several parts being constructed and used together as and for the purpose herein specified.

No. 48,601.—Owen W. Taft, New York, N. Y.—*Skates.*—July 4, 1865.—This invention consists in a heating attachment, and making the foot plate detachable, and will be understood by reference to claim and engraving.

Claim.—First, the application to a skate of a heating attachment, substantially such as herein described, or any equivalent thereof, for the purposes set forth.

Second, making the foot plate detachable, substantially as and for the purpose specified.

Third, the hook catches *d* and forked stud *f*, in combination with the foot plate C, heater E, studs *e*, and spring *g*, constructed and operating substantially as and for the purpose set forth.

No. 48,602.—James R. Tempest, Philadelphia, Penn.—*Device for Fastening Lock Key.*—July 4, 1865.—This invention consists in attaching permanently to the shank of the key a circular plate and small ratchet wheel, and to the lock case a spring pawl, all of which operate as follows: the key being inserted the circular plate covers the key-hole, and thus prevents picking instruments being thrust through from the outside, while the pawl engages with the ratchet, and when the bolt is projected the key is prevented from being turned from the outside.

Claim.—The disk *c*, in combination with the ratchet teeth *c*2 on the key C, and the spring pawl D on the face of the lock case A B, the said parts being constructed and arranged to operate together substantially as and for the purpose described.

No. 48,603.—Julius Tomlinson, Newburg, Wis.—*Grain Separator.*—July 4, 1865.—In this machine the hinged pendants and standards of the screen are secured to the frame by means of slots and screws, in order to adjust the inclination. The screen is composed of a series formed with lower bevelled edges, and a spout passing over a central portion that carries the grain from each single screen independently of the others. The inclined feed spout has openings of different sizes, to promote the equal distribution of the grain. A combination of levers with an eccentric is also used.

Claim.—First, securing the pendants C C and standards D D of the screen frame B to the framing A, by means of screws *a* passing through oblong, vertical slots *b* in the pendants and standards and into the framing, to admit of the varying of the inclination of the screen frame, substantially as shown and described.

Second, the screens E formed with bevelled lower edges provided with a flange or lip *d*, and with spouts E, and arranged or disposed within the frame B, and with a blast spout G, to operate in the manner substantially as and for the purpose set forth.

Third, the inclined feed spout N, provided with a bottom *j* having perforations of different sizes, substantially as and for the purpose set forth.

Fourth, the introduction of a lever either straight or bent between the eccentric and the sieve frame, the straight lever to have a movable fulcrum, and the bent lever to be operated by a movable eccentric, substantially as and for the purpose set forth.

No. 48,604.—PHILIP UMHOLTZ, Tremont, Penn.—*Rotary Pump.*—July 4, 1865.—In this invention a vibrating valve on the periphery of a cylinder rotates within a casing; the water entering from a supply pipe is drawn from the annular space surrounding the cylinder into the interior of it, and is thence discharged from an orifice in the side of the casing.

Claim.—The combination of the casing A and its plate B and pin K with the rotary cylinder C, vibrating valve G G′, spring L, and stopper J, substantially as described and represented.

No. 48,605.—SALMON J. WADSWORTH, Buffalo, N. Y.—*Drilling Artesian Wells.*—July 4, 1865.—This invention consists of a device attached to the centre of a drop or trip wheel, whereby most of the twist given to the rope at each revolution of the wheel is absorbed, and only a portion imparted to the rope, to cause an even and gradual rotation to the drill.

Claim.—The swivel C with its rod *c*, in combination with the wheel A, cam B, and rope *x*, in the manner and for the purpose described.

No. 48,606 —ELI G. WARNER, Union Township, Ohio.—*Grain Rake.*—July 4, 1865.—The object of this invention is to provide a rake by which the grain can be readily gathered and brought to a convenient position for binding,

Claim.—The construction of the rake with feet and long teeth, braced to the handle in such a manner as to form a platform on which the grain will lie, raised out of the stubble ready for the hands of the binder, as above described.

No. 48,607.—GEORGE I. WASHBURN, Worcester, Mass.—*Thermal Motor.*—July 4, 1865.—In this invention the expansion and contraction of a bar of metal, under the influence of natural heat, are gathered up by means of springs and levers, so that the power can be used for propelling machinery, clock-work, and similar purposes.

Claim.—First, the utilizing the expansive and contractile force derived from variations of temperature, in tubes or bars of metal, so as to produce a regularly recurrent or continuous motion, the said force being applied through the intervention of a mainspring, or resulting from the regularly recurrent artificial application of heat to said bar or tube.

Second, utilizing the expansive force resulting from the increase of temperature of a confined body of air, to compress a spring from which a regularly recurring or continuous motion is obtained.

Third, utilizing the expansive force resulting from the artificially produced increase of temperature of a confined body of air, which is subjected to the variations of temperature without the accession of fresh air, excepting sufficient to supply the waste.

Fourth, the double forked-shaped bars M M′ K, or their equivalent, embracing a central bar N′, of a different exhaustive power, to which they are mutually attached at or near their extremities, by which the expansive power of a single rod may be almost doubled within a given length, and by which, according to the relative expansibility of the tongs and the embraced portion, it may be made to contract or expand longitudinally by increase of temperature.

Fifth, the levers B B′, multiplying wheels or pulleys A *a* A *a′*, &c., and expansible rod D, the whole being arranged to operate in the manner and for the purpose herein set forth.

Sixth, a series of multiplying levers G I, operating in connection with the levers B B, and expansible rods E E′, in any manner substantially as described.

Seventh, the connecting wires or cords C C, &c., H J, formed of metal or other material, and employed in combination with the multiplying wheels and levers, substantially as and for the purposes explained.

No. 48,608.—GEORGE I. WASHBURN, Worcester, Mass.—*Wire Straightening Machine.*—July 4, 1865.—In this apparatus a double-elbowed shaft, supported horizontally in suitable framework, carries within the elbow a reel supported by and turning upon a short journal which projects from and at a right angle to the central horizontal portion of said elbow. The wire, first wound upon the reel, is thence passed through an orifice made through and coincident with the axis of one of the journals of the elbowed shaft, and thence to a series of small rollers suitably arranged for straightening the wire as they draw it gradually from the

reel. In practice, the elbowed shaft is made to revolve with considerable velocity, and as the reel is carried around with it, the torsion thus produced keeps the wire perpetually turning over, and thus offering successively every portion of its surface to the proper action of the straightening rolls.

Claim.—First, causing the wire to rotate upon its own axis, as it passes between the straightening points, in any manner substantially as set forth.

Second, as an improvement in machines for straightening wire, the combination of the reel C, yoke D, and wheels L L′ L2 L3, arranged and operating substantially as and for the purposes set forth.

No. 48,609.—R. G. Wells, Plummer, Penn.—*Drill.*—July 4, 1865.—This invention consists of a rock drill for boring through all kinds of strata in succession, whether they are hard or soft.

Claim.—Forming the drill with the diagonal edge *b*, and diagonally opposite straight corners *a a*, and alternate bevelled corners *c c*, substantially as and for the purposes herein specified.

No. 48,610.—Peregrine White, Dixmont Centre, Me.—*Buckle.*—July 4, 1865.—This invention consists in an eccentric roller, provided with one or more spurs, a frame or loop, and a cross-bar. One of the straps is attached to the bar, the other to the roller and a bar underneath. In pulling the strap in an opposite direction the roller turns and binds the strap between it and the bar beneath, and in so doing holds the strap firmly.

Claim.—The improved buckle, consisting of the eccentric roller C, one or more spurs *b*, a frame or loop A, and a cross-bar B, arranged and combined substantially in manner and so as to operate as specified.

No. 48,611.—James A. Woodbury, Boston, Mass.—*Slide Valve.*—July 4, 1865.—This invention consists in making the valves of vertical ports, when two series are used independent of each other, and with a space between them, so that they may freely expand between the vertical walls of the ports without sticking between them; across the top of the valves is placed a flat bar, covered with a cap made fast to each valve, but divided in the centre, as the valves are, so as to compel a uniformly parallel movement of the valves, and at the same time provide for the required expansion.

Claim.—First, constructing the valves D D independently of each other, and with a space between them, so that they may be free to expand or contract between the vertical parallel port walls C C, substantially as and for the purpose described.

Second, connecting the valves D D, by means of the bar G, or its equivalent, substantially as and for the purpose described.

No. 48,612.—Thomas H. Worrall, Lawrence, Mass.—*Self-centring Chuck or Holder.*—July 4, 1865.—This invention is designed as an improvement on a chuck patented March 7, 1865, to the present inventor, and consists in passing the outer end of the wedge-shaped jaws through radial slots in the face of the cap, which is operated longitudinally to or from the stock by a thimble, screw-threaded on its outer and inner surface; the inner being of a greater pitch, and gearing, in a thread of corresponding size, on the shank of a spindle, while the outer thread, of less pitch, plays in one formed on the interior of the inner end of the cap. The motion of the nut or thimble one way or the other gives a corresponding movement to the cap, which carries the jaws back or forth in their inclined ways, and consequently moving their faces to or from each other.

Claim.—First, the projections *d′*, or their equivalents, extending from the ends of the jaws *c*, and operating in combination with cross pieces *f*, or their equivalents, and with the cap C, substantially as and for the purpose herein set forth.

Second, the adjustable tips *g*, in combination with the jaws *c*, cap C, and mandrel A, constructed and operating substantially as and for the purpose described.

Third, the differential screws *d e*, applied in combination with the thimble D, cap C, jaws *c*, and mandrel A, substantially as and for the purposes specified.

No. 48,613.—Gilman F. Wright, Graniteville, Mass.—*Water Wheel.*—July 4, 1865.—This invention consists in the water entering the flume or scroll, passing through horizontal, centrally inclined chutes to the bucket, whence it is discharged at the base. A gate, encircling the wheel, is elevated and depressed by a pinion and ratchet arrangement, and the volume of water applied is thus regulated.

Claim.—In combination with a scroll water-way D, the ring gate or curb C, the stationary guide B′, and the wheel B, the whole being constructed, arranged, and operated in the manner and for the purpose substantially as herein described and represented.

No. 48,614.—F. D. Ballou, Abington, Mass., assignor to Alfred B. Ely, Boston, Mass.—*Boot and Shoe.*—July 4, 1865.—This invention consists of a boot or shoe, in which the vamp is fastened by an independent seam, or some other mode of union, to the upper, and then the sole is sewed to the vamp by a sewing machine, which places all the stitches on the outside

of the upper, thus producing in effect a Scotch bottom shoe by machinery; and this the inventor claims as a new article of manufacture.

Claim.—The new article of manufacture, constituting a boot or shoe, substantially in the manner described.

No. 48,615.—JACOB BEYER, assignor to himself and JOHN E. SMITH, Buffalo, N. Y.—*Mode of Extracting Drills from Wells.*—July 4, 1865.—This invention consists of a pair of griping tongs operated by secondary levers in such a manner as to firmly grasp the broken drill and withdraw the same by a direct upward draught. Also, in constructing the tongs with exterior wedge surfaces above and below the hinge, on which are fitted rings operated by a cord reaching to the top of the well, by which the tongs are opened or closed at pleasure.

Claim.—First, operating the griping tongs A A by the reversing or secondary levers C C and rope D, in the manner and for the purposes described.

Second, the combination of the upper ring E and operating cord F with the tapering griping tongs, for the purposes and substantially as described.

Third, the combination of the lower ring E′ with the tapering griping tongs and stop bar G, operating as and for the purposes described.

No. 48,616.—MOSES and JOHN W. CHANDLER, East Corinth, Me., assignor to themselves and ANTHONY and WILSON R. WOODARD, Bangor, Me.—*Cultivator and Potato Digger Combined.*—July 4, 1865.—This invention consists in the employment of two adjustable blades or cultivators in connection with a screen and shares, so arranged as to leave an open space in the centre to admit of the passage of obstructions therefrom.

Claim.—First, the oblique blades or cultivators E E in combination with the shares G G and screens F F, all arranged to operate substantially as and for the purposes set forth.

Second, the shares G G and screens F F, arranged with a space *k* between them to admit of the passage or escape of obstructions from the shares and screens, as set forth.

No. 48,617.—WILLIAM C. CLARK, Portland, Me., assignor to himself, W. D. RICHARDS, Lynn, Mass., and WILLIAM H. SKINNER, Lexington, Mass.—*Car Coupling.*—July 4, 1865.—This invention will be understood by reference to the claim and engravings.

Claim.—The combination of the arm *d* and its socket *h* with the link pin C and the bunter bar, the whole being arranged so as to operate substantially as specified.

Also, the above-described arrangement or application of the spring latch with the socket *h*—that is, so as to operate with the head of the arm *d*, in manner and under circumstances substantially as specified.

No. 48,618.—GEORGE CUSTER, assignor to himself and CHARLES TOLL and JOHN PAXTON, Monroe, Mich.—*Horseshoe.*—July 4, 1865.—This invention consists in serrating or roughening the enlarged parts of the nail hole, so as to hold the head of the nail more tightly when driven in, and also making a shoulder between the roughened part and the nail hole proper.

Claim.—Corrugating or otherwise roughening the countersink or crease at and around the nail hole, so that when the head of the nail is driven against them there shall be a more perfect contact of metal between them, substantially as and for the purpose described.

Also, forming a shoulder between the inclined sides of the countersink or crease in a horseshoe and the nail hole, as and for the purpose substantially as described.

No. 48,619.—P. K. DEDERICK, assignor to L. and P. K. DEDERICK, Albany, N. Y.—*Beater Press.*—July 4, 1865.—This invention consists in an arrangement of the parts whereby the operation of beating and compressing substances for baling may be performed with greater facility than usual. It refers to that class in which levers are employed for operating the follower.

Claim.—First, the employment and use in a beater press of toggle levers with the lower ends of the fulcrum levers permanently located on a plane even with or above the top of the bale, when said levers are connected by the rod H H and bars I I, the whole being so constructed as not to interfere with the relieving of the bale endwise when pressed.

Second, the frames O forming a direct and substantial connection between the fulcrum bars *b′* and the beater as head block, and the suspended plates N attached to the frame O, in the manner and for the purpose described.

Third, the fastenings for the doors composed of the rollers S, connected to the frame of the press by means of links V, and provided with the eccentrics T T and handles U, substantially as set forth.

Fourth, the relieving plates X X arranged with the bars Z, shafts Z′, having eccentrics A′ on them, and connected with the follower bars G, to operate in the manner substantially as and for the purpose set forth.

Fifth, the follower suspended by the bars G G to the upper ends of the toggle levers J J, in combination with the beater C, used as a fixed head while the bale is being pressed.

No. 48,620.—WILLIAM EDSON, assignor to SHEDD & EDSON, Boston, Mass.—*Hydrometer.*—July 4, 1864.—This invention consists of a diagram of lines so drawn and combined

with a scale of figures as to indicate the relative humidity of the air, the dew point, and the absolute amount of moisture when pointed out by an index whose position is regulated by adjustment to the height of the mercury in wet and dry bulb thermometers.

Claim.—First, the combination of indices in such a manner that when one is placed at the height of the mercury in a dry bulb thermometer, and another at the height of the mercury in a wet bulb thermometer, a third point will indicate on a scale the proportion of moisture in the atmosphere, substantially as and for the purpose set forth.

Second, a diagram of lines so combined with a scale of figures, and so constructed or drawn as to indicate the relative humidity of the air, the dew-point, and the absolute amount of moisture, either or all, when pointed out by an index whose position is regulated by adjustment to the height of the mercury in wet and dry bulb thermometers, substantially as and for the purpose set forth.

No. 48,621.—Loyal C. Field, assignor to himself, Joseph P. Frost, and W. S. Bellows, Galesburg, Ill.—*Beating Device for Baling Presses.*—July 4, 1865.—Two sides of the box are hinged at the bottom, and close automatically before the beater falls, after which they again open, thus allowing the substance to be beaten to lie at each operation on a solid bottom, the quantity previously beaten being removed after the opening of the sides or doors.

Claim.—Closing the doors automatically just previous to the liberation and fall of the beater, and opening them after its fall by means of the horse power, by mechanism substantially as herein described and for the purposes specified.

Also, the connecting of the doors J J to pulleys M on a shaft N, by means of chains, ropes, or cards L, the lever P connected to a pulley O on shaft N by a chain, cord, or strap Q, when said parts are used in connection with a rising and falling beater B, and a horse power or other motor, all arranged to operate substantially as and for the purpose set forth.

No. 48,622.—Joshua Gray, Medford, Mass., assignor to himself and E. H. Eldridge, Boston, Mass.; W. G. Langdon, Malden, Mass., and S. S. Bucklin, Providence, R. I.—*Magazine Fire-arm.*—July 4, 1865.—A side-opening is provided in the outer tube of the magazine for the introduction of cartridges, so that the inner tube, containing the spring and follower, may never have to be removed.

Claim.—First, so shaping the opening L in the magazine that it will be impossible to insert a cartridge wrong end front, substantially as described.

Second, the slot or stop *j* and a pin or stop *i*, or their equivalents, to prevent the inner tube D from ever coming out of the magazine C, substantially as described.

No. 48,623.—J. Wilson Hodges, assignor to himself and P. De Murguionds, Baltimore, Md.—*Horseshoe.*—July 4, 1865.—This invention consists in making a groove in the under side of an ordinary horseshoe, in which is secured a removable roughing bar provided with calks. A blank bar may be placed in the groove when the roughing bar is removed.

Claim.—First, the attachable and removable roughing bar C provided with calks and secured in the groove of the shoe by means substantially as described.

Second, the blank bar E adapted to occupy the groove B in the absence of the roughing bar, and secured in a similar manner within the groove.

No. 48,624.—Horace Holt, Brooklyn, N. Y., assignor to William W. Secombe, of New York, N. Y.—*Hand Stamp.*—July 4, 1865.—Two cavities are made in the stamp head, each containing a reel. One reel contains all the inked ribbon, which is led under the head over the type and is rolled up on the other reel. This head is secured to its stem by two screws, one catching in a nick in one side of the plate and the other in a segmental slot on the opposite side.

Claim.—First, the type-carrying head F, constructed with cavities *d d* for the reception of the ink ribbon, and attached to its stem D by a circular groove and set screw, or equivalent device, to admit of turning it on its axis, all substantially as herein shown and described, and for the purposes specified.

Second, the nick *j*, segmental slot *j*, and spring *k* in the type plate G, to operate in combination with the screws or studs *i i* in the head F, substantially as and for the purpose set forth.

No. 48,625.—Charles B. Hutchinson, assignor to himself and J. H. Woodruff, Auburn, N. Y.—*Process for Lining Oil Barrels.*—July 4, 1865.—This invention consists in heating the inside of the barrel, by means of hot air forced into it by a pump, and treating the barrel while warm with an oil-proof composition, and forcing it into the pores of the wood by the pressure of the hot air. A pump may be used, communicating with the annular space around the furnace. The annular space is connected with a vessel by means of a tube, the vessel being provided with a tube which is connected with the barrel when the apparatus is in operation.

Claim.—The within described process for applying solutions to the interior of casks, barrels, &c., to render them tight, so as to avoid the loss of their contents by leakage and evaporation, to wit, by heating and drying the interior of the cask or barrel, and opening the pores of wood by hot air, forced into the same through the medium of a pump. or its equiva-

lent, and then applying the solution to the interior warm surface of the cask or barrel and forcing it into the open pores, cracks, and crevices by hot air under pressure, substantially as set forth.

No. 48,626.—H. D. JENNINGS, Ilion, N. Y., assignor to BERNARD LAVERY, Waterford, N. Y.—*Curling Iron.*—July 4, 1865.—In this invention the curling iron is heated by an interior iron which is removed when the outer iron is applied to the hair.

Claim.—A curling iron constructed and made in two parts, consisting of a shell and core, each having a separate handle, substantially as and for the purpose herein described.

No. 48,627.—JOHN LACEY, assignor to CONRAD FURST and DAVID BRADLEY, Chicago, Ill.—*Cultivator.*—July 4, 1865.—In this machine the square cultivator frame moves freely over the axle upon bevelled rollers. Two movable arms are pivoted to the axle near the wheels at one end, and at the other to the front ends of the cultivator frame. The seat rests upon a long lever firmly fastened by an upright to the axle, and its front end to the draught pole. The driver's feet move the whole frame laterally.

Claim.—First, connecting the movable parts of a mounted cultivator with the wheels and axle by the horizontal swinging bars or rods I, substantially as shown and described.

Second, pivoting the seat lever K to the axle by means of the post M, or its equivalent, and to the movable parts of a cultivator, so as to adjust the weight of such movable parts and cause the reaction of the force applied to move them to operate in the same direction as the direct force, all being substantially arranged and constructed as and for the purposes set forth and specified.

No. 48,628.—F. M. LOVE, assignor to himself and SAMUEL C. LOVE, Waldron, Ind.—*Evaporator.*—July 4, 1865.—This invention consists of a furnace provided with pans, partitions being placed between the bottoms of the pans and the bottom of the furnace. The valves are so arranged that the heat can be thrown directly under the pans, or can be made to pass through the space between the partitions and the bottom of the furnace. Under the bottom of the pan is a valve, sliding in a groove in such a manner that it can be removed when desired.

Claim.—The combination of the furnace A with the valves *c c c c* and *c*, the graduations with plates B B B B and *f*, the boxes C C1 C2 C3 and D, the partitions *d d d*, and doors *k*, and the pipes O O O O; all or as many of each of the above-mentioned boxes, plates, valves, cranks, or pipes and graduations as may be desired, arranged and operating substantially as and for the purpose shown and described.

No. 48,629.—ROBERT J. ROBESON, assignor to himself and JARED W. MILLS, Chicago, Ill.—*Horse Rake.*—July 4, 1865.—This invention consists in the employment of an adjustable fulcrum bar, hinged to the axle, with a metallic plate attached to its rear end, said plates being provided with slots, in which a pin, passing through the lever by which the rake is raised, plays back and forth.

Claim.—First, the employment of the hinged or adjustable fulcrum F, provided with the slot *f*, arranged and operating substantially as and for the purposes herein specified and shown.

Second, the combination of the lever E, provided with the rod or rest *e* and the hinged arm or fulcrum F, provided with the slot *f*, as and for the purposes specified.

Third, the combination of the rake D, the levers E, and arms M, the lever *l n*, and hinged fulcrum F, all arranged and operating substantially as and for the purpose specified and shown.

No. 48,630.—NATHANIEL SEHNER, assignor to himself and ABRAHAM HUFFER, Hagerstown, Md.—*Hinge.*—July 4, 1865.—That part of the hinge which forms the eye to receive the pintle is extended considerably beyond the eye and terminates in a wide, flat surface, and upon the other part of the hinge are riveted strong steel springs, which bear against this extension, the latter having three angles outside, which operate to hold the shutter either open, half open, or shut, as desired.

Claim.—Fastening or locking a hinge or butt by means of a spring or springs and an eccentric, constructed and operated substantially in the manner and for the purpose set forth.

No. 48,631.—JOB SHATTUCK, Brookline, N. H., assignor to himself and JOHN S. PROCTOR, Mason, N. H.—*Pantry.*—July 4, 1865.—This invention consists in the combination of a sink with a closet for dishes and kitchen stores, a closet for a barrel of flour, several drawers, a moulding and an ironing board, when combined and ready for use, and rendered portable or removable from place to place.

Claim.—A movable pantry, constructed substantially as and for the purpose above described and stated.

No. 48,632.—CORNELIUS ST. JOHN, Boston, Mass., assignor to O. M. SOUTHWICK, Woonsocket, R. I.—*Lamp Shade.*—July 4, 1865.—This invention consists in the combina-

tion of a pyramidal lamp shade and a series of reflectors hinged thereto. The shade is lined with mica, to resist heat and reflect light.

Claim.—The combination of the pyramidal lamp shade A and the series of reflectors C C and *c* arranged and applied to it, substantially as and so as to operate as specified.

Also, the pyramidal shade, as made with the heat resisting and reflecting lining and the adjustable reflectors, arranged substantially as specified.

No. 48,633.—Edward H. Tracey, assignor to the Eagle Auger and Skate Manufacturing Company, Meriden, Conn.—*Die for Making Augers.*—July 4, 1865.—This invention consists in so constructing the dies that the two cutting bits and two lips of a double-bitted auger may be formed simultaneously and at one operation.

Claim.—The construction of the respective parts of the die which perform the operation set forth substantially in the manner described.

No. 48,634.—Daniel T. Wilson, Harrisburg, Penn., assignor to himself and Reuben Hoffheins, Dover, Penn.—*Substitute for Rosin.*—July 4, 1865.—This invention consists of coal tar boiled down to the consistency of rosin, for which it may be used as a substitute in soldering, casting, &c.

Claim.—The use of coal tar, prepared substantially as described, as a substitute for rosin, for the purposes set forth.

No. 48,635.—Charles Boschan, Josef Bindtner, and William Caffon, Vienna, Austria.—*Lamp.*—July 4, 1865.—This invention consists in making the exterior of the lamp in sections, and with a removable oil can or cans, to be taken out so as to be filled and replaced, and placing the wick tube on the external section. The oil cup is attached by a screw from the under and inner side thereof, to the outer and upper section.

Claim.—First, making the exterior of the lamps in sections, M M′, so that they may be taken apart for the purpose of removing or replacing the oil cup or reservoir, which is separable from the said exterior of the lamp, substantially as described.

Second, in combination with the sectional exterior of the lamp, M M′, and a removable and replaceable cup or oil reservoir, the placing of the wick tube and cap or burner on the external section, and attaching the oil cup, with the wick tube projecting therein, by a screw from the under and inner side thereof, to the said outer and upper section, substantially as described.

No. 48,636.—Alexander Hamar, Hungary, Austria, assignor to John C. Fremont, New York, N. Y.—*Preserving Wood from Decay, &c.*—July 4, 1865.—This invention consists in making a solution of sulphate of iron, in the proportion of one pound to one hundred pounds of water, and then forcing the solution through the pores of the wood, until the liquid issues from the other end of the same strength that it enters.

Claim.—Preserving wood from decay, insects, and other destructive agents, by means of a solution prepared substantially as herein described, and applied in the manner herein set forth.

No. 48,637.—Horatio H. Abbe, Chatham, Conn.—*Door Bell or Gong.*—July 11, 1865.—This invention consists in the employment of a slide formed with a zigzag groove, which operates the hammer, giving it several motions or strokes on the bell by one pull of the slide to which the bell-pull is attached.

Claim.—The use of a sliding groove, or its equivalent, in combination with the clapper E, and the spring *b*, for the purposes specified.

No. 48,638.—Charles S. Adams, Hillsdale, Mich.—*Foot Rest.*—July 11, 1865.—This invention consists in forming an ottoman or foot rest, the top of which is in three parts, the centre part being adjustable and forced up by a spring, and held in any desirable position by spring catches. The main or lower part of the box can be used as a receptacle for slippers, boot-jack, &c.

Claim.—First, the combination of the section C, and slides *a*, with the spring catches *d*, or their equivalents, constructed and arranged so that the section C, or foot rest, may be raised or lowered to the desired height, substantially as herein shown and described.

Second, the combination of the section C, spring E, and spring catches *d*, arranged and employed in the manner and for the objects herein specified.

No. 48,639.—Cyrus W. Baldwin, Boston, Mass.—*Hot-air Engine.*—July 11, 1865.—This invention consists in a combination and arrangement of devices for the purpose of supplying the operating ends of each cylinder with heated air and gaseous products of combustion for two or more furnaces. Also, in the arrangement of passages for the purpose of preventing any flame or solid substance from entering the cylinders. The air induction passage is so arranged that the valves are prevented from becoming heated to an injurious extent, and the air induction passages are so arranged that the impelling medium is made to enter the cylinder directly under the centre of the piston.

Claim.—First, in a hot-air engine the arrangement, substantially as described, by which

a single cylinder is supplied on one side only of its piston from two or more furnaces, which are separate from each other as to the means for the reception in each of fuel and air, but which discharge their gaseous products of combustion into said cylinder as stated, through a common valve chamber.

Second, providing at the top of the fire box of a hot-air engine a passage around the same for conducting the gaseous products of combustion to the cylinder, so as to cut off therefrom and from the valve chamber actual flame, and cause the deposit of solid matter, substantially as specified.

Third, the arrangement for supplying the air for the support of combustion, and to be heated to fill the cylinder by passing the whole of it into the fire box above the fuel, instead of passing the whole or a portion of it through the fuel, as previously practiced.

Fourth, incasing the valve chest, and passing the cold air from the force pump on its way to the fire box into said casing and around, and for the purpose of cooling the chest, substantially as specified.

Fifth, the arrangement of the lower part of the cylinder without any metallic inner boundary, and of fire brick or other suitable non-conductor, supported by a metallic casing, substantially as specified.

No. 48,640.—MILTON BALL, Canton, Ohio.—*Railroad Switch.*—July 11, 1865.—This invention consists in enclosing the switch stand in such a manner that the tender cannot leave his position until the switch is properly arranged; the lever operating the switch being connected by rods to a door or doors, so as to close them, and the person cannot leave the place when the switch is not adjusted.

Claim.—First, so constructing a railroad switch that when the operator opens it he will be unable to leave it without closing it again, substantially as described.

Second, surrounding a railroad switch with an enclosure having one or more entrances, which stand open while the switch is closed, but which are closed in the act of opening the switch, substantially as described.

No. 48,641.—MILTON BARNARD, Unionville, Penn.—*Sheep Rack.*—July 11, 1865.—In this device a pyramidal partition extends upward and beyond the ends of two pivoted sides, in order to form two separate hoppers and troughs.

Claim.—The pyramidal partition B, extending upward beyond and between the ends of the pivoted sides *b b*, for the purpose of forming two separate hoppers and troughs, substantially as herein described.

No. 48,642.—HENRY BARTON, Baltimore, Md.—*Compound Explosive Shell.*—July 11, 1865.—The shell belongs to that class containing or consisting of a number of independent segmental shells. Within an elongated or cylindrical shell are arranged a series of closely fitting segmental shells, leaving a central tubular space for the exploding or separating charge. From this central charge, fire is communicated to each of the contained shells by means of a fuse from each, connecting with the central chamber.

Claim.—The construction and arrangement of the independent chambers J, within an external shell A, so as to form a central chamber or magazine K, communicating with each fuse pipe L, as herein described and for the purposes set forth.

No. 48,643.—WILLIAM BATCHELDER, Newburyport, Mass.—*Truss for Bridges.*—July 11, 1865.—This invention consists of a truss bridge formed of a series of wires attached to metallic plates, placed diagonally and vertically, in order to produce the greater strength.

Claim.—The truss made substantially as described—that is to say, of the rods *a a b b c c c c d d d d e e e e f f f f g g h h r r t t t t*, the hangers *o p p q*, and the connections A A A A C C D E F F and G, arranged and applied together in manner as specified and represented.

Also, in combination therewith, the series of rings *c*, or their equivalents, applied at the intersections or crossings of the rods.

Also, the combination of two of the said trusses and two series of parallel rods *u u*, diagonal rods *i k*, and bent rods *l*, arranged with the said trusses as specified.

No. 48,644.—GEORGE BEARD, Salineville, Ohio.—*Measure for the Human Body.*—July 11, 1865.—Extensible bands and rods are arranged to be applied to the lengths and circumference of the different parts of the body, scales being arranged at each part to indicate the exact measures.

Claim.—An extensible measure for the human body, applied thereto and operated substantially as herein described.

No. 48,645.—B. H. BENER and M. H. BURGESS, Erie, Penn.—*Medicated Candy.*—July 11, 1865.—This candy is made by combining sugar with a decoction formed by boiling together equal quantities of Iceland moss, slippery elm, horehound, and water.

Claim.—A medical compound, made as herein described.

No. 48,646.—JOHN S. BODGE, Bath, N. Y.—*Feed-regulating Mechanism for Hoppers.*—July 11, 1865.—In this device a slide working in a slot at the lower opening in the hopper is raised and lowered by a rotating knob and band, placed within reach of the operator, for

the purpose of feeding grain and other substances to the machine in greater or less quantities.

Claim.—A hopper provided with a sliding slide *b*, and operating as herein shown, for the purpose of being raised and lowered to regulate the feed or the discharge of the contents of the hopper from the same, as set forth.

No. 48,647.—JOHN BOLEY, Baldwinsville, N. Y.—*Pump.*—July 11. 1865.—A case provided with an increasing spiral discharge passage has a piston formed with curved wings. Beneath the central part of the piston the wings descend slightly enlarging, to a level with the lower extremity of a flange of the bottom shell, and close up against this flange is a central bar upon which the revolving piston is stepped.

Claim.—The concave extension wings D′, the flange C*, the bar E, securing the step to the flange, the whole arranged and operating substantially as and for the purposes herein set forth.

No. 48,648.—A. F. H. BRAUN, San Francisco, Cal.—*Damper for Violins.*—July 11, 1865.—This device is attached to the tail-board of violins, so as to be pressed by the chin of the performer and produce a softening and modulation of tone when required.

Claim.—The combination and arrangement of the springs D K with the sordine C, as operated by the spring or lever I, and button E, substantially as described, and for the purpose set forth.

No. 48,649.—JOSEPH BROCKWAY, Cambria, N. Y.—*Straw Cutter.*—July 11, 1865.—This invention consists in attaching the cutting knife to the lower end of a pendulum frame so that the swing of the pendulum will bring the edge of the knife to cut the straw obliquely as it passes the throat of the cutting box.

Claim.—Attaching the knife to the lower part of a pendulum or swinging frame, for the purpose as herein set forth.

No. 48,650.—CHAS. BROMBACHER, New York, N. Y.—*Shears for Cutting Paper.*—July 11, 1865.—This device consists of a stationary shear combined with a moving cutter and a clamping bar which is actuated by springs so as to hold the material to the bed while it is being cut. Between the moving shear and the spring clamping bar is a mechanism so arranged that the upward movement of the shear will release the spring clamping bar. The clamping bar is formed with a bevelled edge next to the shears.

Claim.—First, the combination of a stationary shear, a moving cutter and clamping bar actuated by springs to hold the material to the bed while being cut, as and for the purposes specified.

Second, the combination of a stationary shear, a moving cutter, a spring clamping bar, and mechanism, substantially as specified, between the moving shear and the spring clamping bar, whereby the upward movement of the shear releases the spring clamping bar, substantially as set forth.

Third, forming the clamping bar with a bevelled edge next to the shears, for the purposes specified.

Fourth, the sustaining slide rod *t*, fitted substantially as specified, in combination with the spring clamping bar, for the purposes set forth.

Fifth, the movable sustainer *v* in combination with an adjustable gauge *e*, for the purposes specified.

No. 48,651.—JOHN BROOKS and CHAS. F. SYLVESTER, North Bridgewater, Mass.—*Counter Machine.*—July 11, 1865.—This invention consists in the combination of two edge cutters, and a main cutter, and a mechanism for feeding the strips of leather, and in the combination of a rotary platform with its elevating and turning mechanism and a movable supporter.

Claim.—The combination and arrangement of the edge cutters *y y′*, the main cutter or knife D, and mechanism for feeding the strip of leather to such cutters, the same being in order that such strip may not only be separated into counters, but each counter be reduced or trimmed on its opposite longer or curved edges, substantially as specified.

Also, the combination of the rotary platform C and its elevating and turning mechanisms with the stationary foot B, the tilting knife D, its stationary abutment *m*, and movable supporter P, the whole being arranged and the knife provided with springs, substantially as described.

No. 48,652.—OLIVER L. BROWN, Manitowoc, Wis.—*Governor Valve.*—July 11, 1865.—This invention consists of a valve which is provided with a series of cavities and works in an annular seat which is surrounded by a steam chamber with cavities corresponding in number and position to the cavities in the valve, in such manner that by turning the valve in its seat said cavities can be made to register partially or wholly with the apertures in the seat, and more or less steam passes through the valve.

Claim.—The combination of the projecting valve stems *d d′*, arms F, screws *l l′*, conical valve D, formed with trapezoidal openings *i*, annular seat H, with rectangular openings *h*, steam chamber B, inlet *a*, and outlet *b*, all arranged to operate as specified.

No. 48,653.—JOHN BUNDY, Irondequoit, N. Y.—*Coupling for Carriages.*—July 11, 1865.—This coupling consists of a small circular plate to be fastened to the upper surface of the forward axle at the centre, and of a larger circular plate to be fastened to the bolster or spring-block immediately over the smaller plate, and of an arm extending through a longitudinal box along the back of the larger plate connecting in the rear with the reach from the hind axle.

Claim.—The combination of the coupling with the reach from the rear axle by means of an arm or rod extending through the upper circular plate in such form that the plate revolves around it, substantially as above set forth.

No. 48,654.—ROBERT BURNS, New York, N. Y.—*Corn Planter.*—July 11, 1865.—In this machine the upper section of the seed tube has a perpendicular grating through which move forks that act as cut-offs. These forks and also the seed slides are operated by a small gear-wheel inside the tractor wheel. A small frame suspended by elastic pendants is drawn along with the machine. The frame has two cross-bars carrying an adjustable opener and coverer.

Claim.—The tubes F provided with vertical rods or a grating at their outer or rear sides, in connection with the adjustable seed retainers or holders G, arranged to operate substantially as and for the purpose set forth.

Also, the plates I, in combination with the seed retainers or holders G, all arranged to operate conjointly, substantially as described.

Also, the wheel N provided with teeth *g h r s* t one side, and arranged as shown, so as to be readily thrown in and out of gear with the wheel R, in combination with the levers M O X, for operating the plates I, seed retainers or holders G, and knockers Y Y, for the purposes set forth.

Also, the frames U suspended by the pendants *m*, in combination with the furrow openers T and adjustable coverers, consisting of the flaring plates *n*, and plate *o*, arranged to operate in the manner and for the objects specified.

No. 48,655.—ROBERT BURNS, New York, N. Y.—*Seeding Machine.*—July 11, 1865.—In this machine the perforated reciprocating slides are provided with pendent tubes that have removable plates placed within them and in connection with adjustable pivoted seed delivery tubes placed underneath.

Claim.—The perforated reciprocating slides D provided with pendent tubes E, and having removable plates D placed within them, in connection with the adjustable or pivoted tubes F, substantially as and for the purpose herein set forth.

No. 48,656.—SAMUEL S. CHENEY, Hillsboro', Ohio.—*Car Coupling.*—July 11, 1865.—The object of this invention is to provide an automatic means of attachment of the coupling links which connect the respective draw-heads of two cars, so that by the collision the unconnected end of the link shall act upon the piston which sustains the coupling pin, and thrusting it back shall allow the pin to drop into its lower position in which engages the coupling link; the point of novelty consists in the devices for controlling the motions of the said piston.

Claim.—The method of controlling the motions of the piston in the draw-head by the shoulder in the rear of the head B, and the pin F, which traverses the slot G, the whole arranged substantially as described and represented.

No. 48,657.—WM. and LEWIS CLAYTON, West Philadelphia, Penn.—*Cider Mill.*—July 11, 1865.—This invention consists in the arrangement of knives and scrapers for cutting the apple into thin slices or pieces, in connection with a flexible flap for cleaning the knives as they revolve, whereby the cider mill is rendered very effective and expeditious in operation.

Claim.—First, the combination of the cylinder *g*, sectional pieces *f*, adjustable metallic slips *h*, with sharpened edges and flexible flap *d*, in a cider mill, as and for the purposes herein set forth.

Second, the flexible flap *d*, arranged as and for the purposes described.

No. 48,658.—ISAAC H. COLLAR, Poughkeepsie, N. Y.—*Harvesting Machine.*—July 11, 1865.—The crank wrist or sleeve is furnished with an auxiliary sleeve or box placed exteriorly and at right angles to the main sleeve for the connecting pin of the pitman to pass through, the end of the pitman connected therewith embracing the wrist. The object of this construction is to prevent the twisting or straining of the parts in conforming the cutting apparatus to the uneven surface of the ground.

Claim.—The application of the sleeve D *m* with the crank shaft A, pitman C, and sickle B to harvesting machines, substantially as and for the purpose herein described.

No. 48,659.—JOHN CONDELL, Morristown, N. Y.—*Artificial Arm.*—July 11, 1865.—The nature of this invention will be understood from the claim.

Claim.—First, the appendage Fig. 4, which is adapted to maintain its place by means of its auxiliary attachment, so as to afford two definite and practically rigid points D' D'', to which the flexor and extensor straps or cords are to be attached, so as to produce those motions by the forward and backward movement of the stump.

Second, the cord *a c e* or its equivalent, with or without the intervening lever *d*, and attached substantially as described, by which the forward motion of the metacarpus is obtained.

Third, attaching the flexor and extensor cords or straps to points on the front and rear of the shoulder joint, so as to be brought into action by the forward and rearward motions of the stump.

Fourth, the combination of the flexor and extensor straps with the rocking frame L or its equivalent, which connects by link or otherwise with the fore-arm.

Fifth, the flexor spring L attached to the socket and to the rocking frame L, or its equivalent.

Sixth, the combination of the spring N with the arm P on the axial bolt, and the rocking frame L.

Seventh, the spring Z with its tendons Y F or their equivalent, and extending from a point in the fore-arm to a point back of the centre of vibration of the metacarpus, substantially as described.

Eighth, articulating the metacarpus to the end of the fore-arm by a pivoted point or points, so as to be moved in either direction by appropriate springs or cords, which are attached to the metacarpus at points on opposite sides of the axis of vibration.

Ninth, constructing the fore-arm as described, with a sleeve portion V, which is capable of rotation, so as to change the presentation of the hand.

Tenth, operating the fingers or thumb by the motion, however induced, of the metacarpus.

Eleventh, pivoting the frame piece *m* of the fingers to a point on the metacarpus and the rods, which, under the motion of the metacarpus, primarily induce the deflection of the fingers to a point on the fore-arm.

Twelfth, pivoting the second joint of the frame pan *q* to a point on the frame piece *m* and the rod, which gives the additional deflection due to the second joint to a point attached to or connected with the metacarpus.

Thirteenth, giving the additional deflection due to the terminal section or first joint of each finger by a rod attached to it, and to a point on the frame piece *m*.

Fourteenth, governing the motion of the thumb by a rod attached to the end of the fore-arm, which, under the vibration of the metacarpus, influences the frame piece *x*, and gives the deflection due to the second joint of the thumb.

Fifteenth, giving the deflection due to the first joint of the thumb by means of the rod *y* which performs that office, as the frame piece *x* is vibrated by the rod Z, when the metacarpus is moved

No. 48,660.—JOHN CONDELL, Morristown, N. Y.—*Artificial Leg.*—July 11, 1865.—The nature of this invention will be understood from the claim.

Claim.—First, the adjustable pad B or plate within the socket, for the purpose of adapting the capacity of the socket to the stump, substantially as set forth.

Second, the bridge piece K, which is supported on the frame G and upon the bolt F, and affording the superior point of attachment for the extensor spring I *i' i''*, substantially as described.

Third, the hamstrings N N, arranged substantially as described and attached to the posterior portions of the thigh and leg to act as checks to the forward motion of the leg, in combination with the arrangement for adjusting their tension.

Fourth, the extension spring, consisting of the muscular or spring portion I, the tendon *i'* and the bifurcated tendon *i''*, the insertion of the upper tendon being at the bridge piece K, which bears up the knee belt, and the lower insertion being in the toe piece, substantially as described.

Fifth, the construction of the ankle joint, consisting of the socket in the foot, and the ball P attached by its neck and the iron frame Q Q' to the leg, and having a stud upon it, fitting its appropriate recess in the socket in the foot, so as to prevent vibration in a horizontal plane, while leaving the joint free for motion in vertical planes, as described.

Sixth, the elastic straps *a b*, proportioned as to length and strength, substantially as and for the purpose described.

Seventh, the yoke, Fig. 4, which derives its rigidity and freedom from tendency to displacement from its ultimate point of auxiliary attachment, from whence the straps proceed over the shoulders, so as not alone to bring the weight upon the framework of the body, but also to enable the shoulders by their motion to influence the motion of the artificial limb.

No. 48,661.—MATTHEW F. CONNETT, Evansville, Ind.—*Wood-bending Machine.*—July 11, 1865.—The object of this invention is to bend wood into proper shape for plough handles, and it consists in the combination of a series of rollers set in a frame, and arranged in a circular form, a former being so hung that it vibrates centrally with the rollers, and is adjusted to work nearer to or farther from the rollers, and a sliding lever by which the former is adjusted on the wood.

Claim.—The combination of the uprights *b*, carrying rollers *a*, the curved formers J, and the sliding blocks *e f*, arranged and operated substantially as described, for the purpose set forth.

No. 48,662.—F. B. CONVERSE, New York, N. Y.—*Instrument for Ripping Sutures in Cloth.*—July 11, 1865.—This invention relates to a convenient implement, by means of which seams or sewing in cloth or other materials can be readily and with ease ripped, with no danger of cutting the material; it is applicable both to machine and hand sewing.

Claim.—The implement for ripping seams herein shown, constructed substantially as above described.

No. 48,663.—B. T. CURRIER, Boston, Mass.—*Carpenter's Gauge.*—July 11, 1865.—This invention consists in the use of revolving rollers, provided with flanges and edges, and attached to the gauge stock, and adjusted by screws as are the marking points in common gauges, and are used instead of marking points.

Claim.—Ranging the adjustable stand I, which carries the marking wheel L to traverse in the slot G of the gauge bar B, substantially as described.

No. 48,664.—G. W. DOTY, E. A. and W. F. STEIN, Ravenna, Ohio.—*Photographer's Decanter.*—July 11, 1865.—This invention consists of a decanter provided at its lower end with a faucet with which is connected a tube. The tube is provided at its other end with a cork through which it passes, and is of such length that the cork may be placed in the neck of the decanter. The tube and the cork are connected in this manner, both to prevent the loss of the latter and to conveniently dispose of the former when not in use.

Claim.—The above-described decanter, when provided with the stop-cock tube and cork, substantially in the manner and for the purposes set forth.

No. 48,665.—CHARLES L. DRIESSLEIN, Chicago, Ill.—*Hay Fork.*—July 11, 1865.—This invention consists in a supplementary fork, hinged to the handle or elsewhere, and operated by a rope for holding the load in place; also in overpoising the supplementary fork by attaching balls or equivalents to the ends of its tines, and also in the employment in combination with the above devices of upright arms upon the rigid fork, for the purpose of preventing it from entering the hay or grain too far.

Claim.—In combination with an ordinary rigid fork and its handle, a hinged and swinging fork or shield D, actuated by a cord or rope, substantially as and for the purpose described and represented.

Also, weighting or overpoising the tines or arms of the swinging fork by means of the ball E, or their equivalents, to cause it to fall with more readiness and quickness, as and for the purpose described.

Also, in combination with the permanent and swinging forks, the arms G for preventing the fork from entering the material to be moved by it too far, and thus interfering with the free and unencumbered action of the swinging fork, substantially as herein described.

No. 48,666.—WORDEN EDMISTER and STEPHEN JOHNSON, Mount Vernon, Ohio.—*Churn.*—July 11, 1865.—In this churn the dasher is of the shape of the inverted hand with extended fingers, and is perforated in several places. It is adjusted vertically upon an upright revolving shaft.

Claim.—The dasher C, composed of two parts, constructed as shown, connected together and applied to the shaft D, so as to admit of being adjusted higher and lower thereon, substantially as and for the purpose specified.

No. 48,667.—JAMES ESLER, Brooklyn, N. Y.—*Coupling for Shafts of Boring Tools.*—July 11, 1865.—In this coupling a threaded tenon on the end of one section or rod screws into a threaded socket in the end of the other rod, and the two are prevented from becoming unscrewed by a hollow sleeve which surrounds the rods at the joint, having an inwardly turned flange at one end, which hooks against a shoulder on one rod, and a flat spring key which passes diagonally through the sleeve and against the flat surface of the other rod.

Claim.—Preventing the lower section of the boring rod A from turning away or being disconnected from the rod C by means of the sleeve E and the key H, the said key passing through an aperture in said sleeve by and past one of the squares formed on said section A, as and for the purpose set forth.

No. 48,668.—HORATIO FAIRBANKS, Boston, Mass.—*Flour Sifter.*—July 11, 1865.—This invention consists of a box or hopper provided with a sieve and containing a revolving shaft having a series of angular projections, by means of which the flour is agitated and caused to pass rapidly through the sieve.

Claim.—The revolving shaft C, carrying a series of angular projections, in combination with a box or hopper A, and sieve B, substantially as and for the purpose set forth.

Also, in combination with the above, attaching a rubber strip to one or both sides of the sieve B, substantially as and for the purpose described.

No. 48,669.—H. W. FARLEY, Hannibal, Ohio.—*Excavator.*—July 11, 1865.—This invention consists of an excavator for removing earth from the sides of railroads that may have been washed down near or upon the track. The device is carried upon a car. The scoops

project below it and are operated by means of a windlass and lifting apparatus, so that the scoops can be raised and discharged when desired, the power of the locomotive operating the scoops.

Claim.—First, the shaft G, with its scoops H, in combination with the block and tackle devices for raising, substantially in the manner and for the purpose described.

Second, the partially rotating scoops, operated by a lever or levers on the shafts, to adjust their position or discharge their load.

Third, the combination of the crank W and its connecting gearing with the rope S, and counterbalance weight T, for raising the shaft G, and its scoops.

No. 48,670.—G. W. FITTS, South Hampton, N. H.—*Corn Sheller.*—July 11, 1865.—This invention consists in devices which constitute the discharging throat and by means of which the cobs and grain are separated and the grain subjected to the action of a blast to separate the chaff.

Claim.—The arrangement of the discharging throat G, and its back board or part X, with the curved chute F, and the wheel C, to operate as specified.

No. 48,671.—CHRISTIAN FOSTENSEN, HANS IVERSON, and CHARLES J. SKOW, Racine, Wis.—*Camp Bedstead.*—July 11, 1865.—This invention consists in a combination of devices whereby bedsteads when not in use can be neatly folded up into a compact shape and thus be convenient for transportation or storage.

Claim.—First, the combination and arrangement of the sacking *a*, side-bars *b b*, short end pieces *c* and *d*, bars *f* and *g*, rod *l*, plates *n n*, arms *p* and *q*, plates *t t*, bars *y*, and legs *u u*, substantially as described.

Second, attaching the two ends of the mattress or sacking used for the bedstead to and within a swinging frame of its side-bars, arranged and operating substantially in the manner and for the purposes specified.

No. 48,672.—C. F. FREDERICI, New York, N. Y.—*Apparatus for Distilling.*—July 11, 1865.—This invention consists of a series of hollow drums connected together by means of oblique pipes and secured to a shaft, one end of which is hollow and stationary, and connects with a branch pipe. The whole is surrounded by a jacket by means of which the apparatus may be heated.

Claim.—A distilling apparatus, composed of a series of hollow drums (two or more) connected by oblique pipes, and provided with gudgeons on which it revolves, substantially as and for the purpose set forth.

Also, the combination of the pipe E, and hollow gudgeon *a'*, with the drums C, with or without oblique pipes D, constructed and operating substantially as and for the purpose described.

No. 48,673.—JOSEPH P. GALLAGHER, St. Louis, Mo.—*Cocks.*—July 11, 1865.—This invention consists of a subsidiary tube leading from the main chamber of a faucet, into the valve chamber above the valve. Out of the valve chamber leads a similar tube, not into the main chamber, however. When the valve closes the waste water passes by means of the tube before mentioned up into the valve chamber, and thence by means of the egress tube is conducted away, thus preventing freezing. When the valve rises the waste passage is closed.

Claim.—First, the tube F, arranged relatively with the body A of the cock or faucet and the chamber or barrel D, and the valve B, in connection with the tube C, disk G, and escape spout H, substantially as and for the purpose specified.

Second, the groove *b* in the periphery of disk G, when used in connection with the parts specified in the first claim, for the purpose of affording an annular chamber around the disk G as described.

No. 48,674.—AMMI M. GEORGE, Nashua, N. H.—*Pipe Couplings.*—July 11, 1865.—This invention consists in an arrangement of two or more button bolts, in combination with the two parts of a hose coupling. The arrangement is such that by turning the bolts so as to bring the button heads in one position, the two parts of the coupling are put together or taken apart at pleasure, and by simply turning the heads to other positions while the two parts of the coupling are in contact they are bound together and firmly held.

Claim.—The combinations of the projections, heads, or buttons *b b* of the bolts B B, and the inclined surface K K *l l*, K K *l l*, with the two parts of the coupling, substantially as and for the purpose set forth.

No. 48,675.—SAMUEL GLADDING, Providence, R. I.—*Chain-holder.*—July 11, 1865.—This chain-holder is the comman claw with fingers made winged so as to close for grasping the chain and to open for freeing it. The fingers are kept close to the chain by a pin or catch on one end of a claw. By the use of a wedge the catch is held down and by knocking out the wedge the catch is freed and the fingers open to permit the chain to pass.

Claim.—First, the movable fingers *a a* in combination with the catch *b* and the mortises *c c* constructed substantially as set forth.

Second, the combination of the fingers *a a* mortises *c c* with the catch *b* provided with the pins *i* in connection with the wedge *h*, constructed and arranged substantially in the manner described and for the purpose set forth.

No. 48,676.—PORTER J. GLADWIN, Boston, Mass.—*Tool for Lifting Stove-covers, &c.*—July 11, 1865.—This device is composed of two parts, one pivoted in a slot near the end of the other, so that when the tool is in position, this part falling by its gravity opens the notched jaws at the end furthest from the hand. When in use the fingers can easily control the handles and thus cause the jaws to open or close ; the other end is formed so that it may be used as a tack drawer, &c.

Claim.—The within described tool consisting essentially of the handle A, with its stationary jaw B, and slot *b*, in combination with the movable jaw C, and its arm *c'*, the whole arranged and operating as and for the purpose set forth.

No. 48,677.—NATHANIEL GRANT and GEORGE DOWNS, Providence, R. I.—*Band for Head Dresses.*—July 11, 1865.—This band presenting its concavity to the back of the head has a hole at each end through which a rod passes in a line corresponding to the cord of a bow. At each end of this rod is a ball or other enlargement. These parts are made of hoops or horns reduced to a plastic condition by well-known means and formed in heated moulds.

Claim.—The improved band for ornamental head dresses made of the material herein described, as a new article of manufacture.

No. 48,678.—C. B. GUY, Lybrand, Iowa.—*Combined Lamp and Stove.*—July 11, 1865.—This device consists of a combination of a lamp and stove, so that the smoke may be carried off by the stove-pipe.

Claim.—A lamp combined with a stove and register in the manner substantially as herein shown and described, so that the smoke and odor emitted from the lamp may be carried off by the stove-pipe, and the rays of light admitted into the apartment or shut off from the same when desired, substantially as set forth.

No. 48,679.—A. HAMMOND, Jacksonville, Ill.—*Gang Plough.*—July 11, 1865.—In this machine the tongue is bolted upon the front of a small platform that is itself held by a shaft passing through both beams of the plough in front of the axle. The platform with the tongue turns vertically upon the shaft and is kept at any desired angle by a vertical rack and pawl. The rear end of the tongue moves laterally upon a rack at the rear of the platform ; thus the tongue is adjusted both laterally and vertically.

Claim.—First, the segment rack L, pawl M, and foot lever O, all arranged and applied to the plank or timber D, and beam A, substantially as and for the purpose specified.

Second, the button P, when applied to the plank or timber D, and used in connection with he rack L, pawl M, and foot lever O, for the purpose set forth.

No. 48,680.—J. H. HARRIS, Newark, N. J.—*Machine for Granulating Tobacco.*—July 11, 1865.—This invention consists in a machine for granulating or dividing the leaves of tobacco into minute divisions for smoking in pipes, wherein a corrugated beater roller is made to revolve within a vibrating vessel, whose sides are composed of wire-cloth on a mesh of like character, so that the tobacco is broken up and delivered in small pieces through the meshes of the wire-cloth into a box below.

Claim.—The combination in a machine for granulating tobacco of the vibrating vessel D having open sides with a corrugated roller revolving therein, substantially as described.

No. 48,681.—E. H. HAWLEY, Signal Corps, army of Potomac.—*Cryptographic Alphabet.*—July 11, 1865.—The object of this invention is to so construct a cryptographic alphabet that the different letter tablets may be variously adjusted with relation to each other as dictated by a new key word, and the signification of the different key letters so changed thereby that even an expert who thoroughly understands the system and apparatus, cannot decipher a despatch without first possessing the key word which dictates the arrangement of the tablets.

Claim.—A cryptographic alphabet arranged substantially in the manner and for the purpose specified.

No. 48,682.—FRANCIS D. HAYWARD, Malden, Mass., and PASCAL STONE, Charlestown, Mass.—*Boot Heel.*—July 11, 1865.—This invention consists in an elastic dovetailed connection so that the tread part may be either revolved or adjusted relatively to the heel part.

Claim.—The improved heel or parts A B, as made with the dovetail connection, elastic as described, or with the circular or polygonal elastic dovetail connection as explained, the whole being so that the tread part B may be either revolved or adjusted relatively to the part A, substantially as and for the purpose specified.

No. 48,683.—JOHN HEINLEIN, Galena, Ill.—*Washing Machine.*—July 11, 1865.—This invention consists of a swinging pressure roller frame, in connection with an elastic washboard and combination with an air chamber.

Claim.—First, the air chamber E, arranged relatively with the wash-board C, to operate in connection therewith, substantially as and for the purpose specified.

Second, the combination of the swinging rollers *e*, wash-board C, and air chamber E, all arranged and combined to operate in the manner as and for the purpose set forth.

No 48,684.—SAMUEL HEFLEBOWER, Alexandria, Va.—*Flour Bolt.*—July 11, 1865.—This invention consists of a radial prolongation of the wings of a fan at the tail end of a bolt to create a current of air. It also consists in inserting a metal plate at the bottom of a non-revolving bolt reel to receive the falling meal and prevent injury to the bolt-cloth.

Claim.—Making a radial prolongation *e* to the wings of the fan at the tail end of the horizontal or nearly horizontal bolt, the said radial extension of the wing or wings beyond the main portion of the fan being adapted to cause a current of air to be drawn through the bolt in the manner and for the purpose described.

Also, the plate N, Fig. 3, in combination with the scoop-shaped dippers.

No. 48,685.—ANTON HEHNIGER, New Haven, Conn.—*Dirk Knives.*—July 11, 1865.—This invention consists in enlarging the shoulder of the small blade upon the inner side, so that when shut it will come in contact with a small bent projection upon the inner side of the spring of the large or dirk blade, and being pressed inward by the thumb it will pass the said spring so as to release the dirk blade from the catch at the end of the spring and allow it to be shut.

Claim.—The combination of two blades, B and C, with the spring *g*, when the parts are constructed, arranged, and fitted for use, substantially as herein described.

No. 48,686.—H. Z. HOPKINS, San Francisco, Cal.—*Metallic Packing Boxes.*—July 11, 1865.—This invention consists of a conical box or follower, a sectional or split lining, and a cap, so constructed that the lining can be made to embrace the rod more or less closely by tightening the nuts which hold the follower in position; and it is prevented from closing too tightly upon the rail by the zig which passes into an aperture in the lining provided for the purpose. The key is held in its position by a nut placed upon a stud secured to the cylinder head, and which passes through a portion of the wedge, which is at a right angle to the main portion thereof. By tightening the nut on this belt the wedge is thrust into the lining, and the position of the same is regulated with reference to the rod.

Claim.—The tapering split or sectional lining C, with expanding wedge D, in combination with the box A and follower or cap B, constructed and operating substantially as and for the purpose described.

No. 48,687.—J. M. HOWE, Portland, Oregon.—*Machine for Making Wagon Wheels.*—July 11, 1865.—This invention relates to a machine which saws and bores the felloes, tenons the spokes at both ends, sawing them to the required length, and planing the felloes simultaneously at three sides; and it consists in forming the tenons on the spoke, driving the spokes into the hub, which is centred on the ring table, formed by a slide and ring, so that by turning the ring the spokes are in turn presented to a circular saw, which cuts them to the required length. The tenons on the outer end of the spokes are made by a hollow auger on the shaft in the place of the saw, and the felloes bored by a bit placed on the shaft. The felloes are then driven on the spokes and presented to planers that, as the ring carrying the wheel is revolved, planes the sides and the outer circle of the wheel at the same time.

Claim.—The annular slide G, with the ring H attached, and the latter provided with the arms *f* and the slides *g*, in connection with the shafts C C′ and D, provided with cutters C and C′, all arranged substantially as and for the purpose herein set forth.

No. 48,688.—K. T. HURLBERT, Lyons, N. Y.—*Carriage Top.*—July 11, 1865.—This invention consists in placing the socket on the seat of the carriage and the joints in the bows, so that the top can be folded in a very small space and put under the seat.

Claim.—The combination of the pivoted socket D, guide *a*, and plate C, so arranged as to allow the carriage top to be easily applied or removed, and to be turned half way back, substantially as described.

Also, the construction of the top, consisting of the jointed bows E E E′ E′, single toggle levers G G, and suitable covering A, the whole so arranged as to be compactly folded up, substantially as herein set forth.

Also, the arrangement of the pivoted socket D and guide *a* of the seat, and the bows E F″, toggle levers G G, and covering A of the top, substantially in the manner and for the purpose herein specified.

No. 48,689.—W. W. HUSE, Brooklyn, N. Y.—*Process of Curing Tobacco.*—July 11, 1865.—An air-tight room is so arranged that by means of steam pipes it may be heated to any required temperature. One half of the steam pipes are pierced with holes so that steam may be let into the room. The tobacco is placed in this room, and the temperature is raised to 150° Fahrenheit, and maintained for about forty-eight hours; the tobacco is then taken out, dried, and heated in the ordinary manner.

Claim.—The process, substantially as herein described, of curing tobacco, which process consists in subjecting it to the action of artificial heat and steam to induce the required fermentation until nicotine is evolved, and then stopping the further progress of fermentation by opening the packages and thoroughly drying every part, substantially as described.

No. 48,690.—JOHN S. JONES, Covington, Ind.—*Binding Attachment to Reaping Machines.*—July 11, 1865.—This invention consists in certain devices that bind and drop on the ground the sheaf by twisting the band under a rod, tucking it, holding the sheaf and band firmly until the latter is tucked, and removing the sheaf by the devices that tuck the band.

Claim.—First, the combination of the rack *a*, pinion *b*, wheel C, bevel pinion *d*, curved wings G, spring A, hand N, fork T, and triangle *q*, for the purposes set forth.

Second, the rod I, or its equivalent, in combination with twisting devices J and K, for the purpose described.

Third, the arrangement of the sheaf bed F and its wings G, in combination with the elevator X, that lifts them, the device Y that operates that elevator, the rods *m* that lay over the sheaf bed, holding the straw down while the wings press it.

No. 48,691.—HORACE M. KEITH, Commerce, Michigan.—*Pump.*—July 11, 1865.—The induction tube is within a pump stock, to which the main cylinder is clamped. A cut-off is set transversely within this stock. Below this cut-off a port and valve permit the flow into the cylinder, and above the cut-off a port and valve permit the flow back to the stock and upward. The pump brake is pivoted at fhe top of the stock. Water forced up around the piston through a packing of slot overflows into a side cylinder, into which dips an arm with a bucket at its extremity, said arm springing from and moving with the piston rod. Thus the water, overflowing with the descent of the piston, is poured back with its ascent.

Claim.—The reservoir B, the valves *m* and *n*, the cut-off S, the swipe pole I, and the bucket F, and the cylinder C, the whole constructed, arranged, and operating as and for the purpose substantially as herein set forth.

No. 48,692.—EDWIN KENDALL, New Lebanon, N. Y.—*Piston Packing.*—July 11, 1865.—This invention consists of a coiled spring, which is placed between the flanges of the piston head in such a manner as to be capable of expanding for the purpose of producing a tight joint between itself and the sides of the cylinder.

Claim.—A packing for pistons, consisting of a coiled spring C, secured between the heads B B, and adapted to operate substantially as herein described.

No. 48,693.—E. D. KINNEY and CALEB WRIGHT, Philadelphia, Penn.—*Construction of Glass Cases.*—July 11, 1865.—This invention consists of a case constructed of plates of glass, six in number, arranged in the form of a parallelopipedon, the plates being connected by angle irons or other metallic strips, and intended to form a transparent covering for photographic albums.

Claim.—The within-described case composed of the plates of glass arranged in respect to each other, held by the angular slips of the frame, and supported by the bent pieces *e*, all substantially as described.

No. 48,694.—J. KINDLEBERGER, Springfield, Ohio.—*Water Wheel.*—July 11, 1865.—The object of this invention consists in a combination of devices whereby to open and close the gates to increase or diminish the ingress of water, and to protect the mechanism from injury by drift or other foreign substances. Its novelty consists in a cap through which the shaft of a pinion passes, and the combination and arrangement of the buckets, bent arms, levers, screws, springs, and segment pins, for operating the gates.

Claim.—First, the springs, applied to the opening and closing mechanism of the gates, where a plurality of gates are used for a single wheel, so that any one of said gates, in case of being prevented from closing, will not prevent the closing of the others, as herein set forth.

Second, the arrangement of the bent arms C and levers D with the set screws *e*, springs *g*, plate E, the pendent pins *h*, the segment G, and pinion H, for operating the gates B, as set forth.

Third, the arrangement of the buckets *l* of serpentine form, substantially as described.

Fourth, the cap I through which the shaft *j* of the pinion H passes, and which covers and protects the parts for opening and closing the gates, as herein set forth.

No. 48,695.—JOHN KNICKERBOCKER, Hartford, Conn.—*Damper.*—July 11, 1865.—At any desirable point in the stove-pipe are placed two radiating plates, joined together at their lower ends, extending lengthwise of the pipe. By means of connecting rods and joints these plates are connected with a circular damper placed above them. The entire apparatus is hung on a pivot rod, which projects outside the pipe, and by means of which the draught is regulated.

Claim.—As a new improved article of manufacture, viz., the combination of the plates *b* with the damper *c* and adjusting rod *g*, with their connections, substantially as and for the purpose described.

No. 48,696.—J. H. La Boyteaux and C. A. Ashton, Jacksonville, Ill.—*Gang Plough.*—July 11, 1865.—In this machine an upright, upon which the wheel is fixed, slides vertically upon the end of the axle, thus raising and lowering the plough axle. This upright is adjusted by a hand lever and chain running over pulleys in the upright, and also in the guide in which the upright moves. A short hand lever, running through a slotted bar, hinged in the rear of the seat, by means of a chain and pulleys on the draught pole, elevates the plough beams.

Claim.—First, the adjusting of the axle A, and consequently of the plough beams and ploughs, by means of the lever *j* connected with the axle through the medium of the chain G, arranged substantially as described, for the purpose of adjusting the ploughs to suit the surface of the ground over which they work.

Second, the pivoted plough beams N M, in connection with the bar S, lever T, and chain N*, all arranged to operate in the manner substantially as and for the purpose set forth.

No. 48,697.—Edwin B. Larcher, New York, N. Y.—*Method of Preparing Flour and Meal for Transportation.*—July 11, 1865; antedated June 28, 1865.—This invention consists in pressing the flour or meal into cakes by means of hydraulic pressure. These cakes are protected from atmospheric influence by a coating of paste, starch, or varnish.

Claim.—The preparation of flour or meal for its preservation by compressing the same, as and for the purposes specified.

No. 48,698.—John Lee, Massillon, Ohio.—*Self-acting Gate.*—July 11, 1865.—This invention consists in pivoting the upper horizontal balance rail of a gate to a sliding bearing, so that the pivot of the upper rail shall be beyond the pivot of the lower rail, and shall approach the lower pivot as the gate approaches a vertical position. By this means the gate is enabled to be so easily balanced that a light operating weight only is required; and also to be constructed with vertical pickets, whereby the appearance of the gate is preserved uniform with that of the fence.

Claim.—First, sliding block E and pivot *d*, or their equivalent, constructed and operating as set forth.

Second, hinging the weight H to the top of the upper rail in the manner described, or its equivalent.

Third, operating the latch bar G by means of the picket F′ and slots Y, or their equivalents, as set forth.

Fourth, the cast-iron piece P, or its equivalent, operating as described.

Fifth, the combination and arrangement of shafts L and N and lever Q, or their equivalent, operating as described.

No. 48,699.—Michael Loughran, assignor to himself and James B. Loughran, Pittsburg, Penn.—*Method of Forming Blank Clips for Singletrees.*—July 11, 1865.—This invention consists in rolling out a bar of iron of suitable size into a thin band or strip, with a longitudinal bead or rib on each side, either in the middle or near the edge, and afterwards passing the said strip through another set of rolls, whereby alternate portions of the bead on one side are made level or even with the surface of the main band or strip.

Claim.—As a new article of manufacture, bars of iron having a raised brad running longitudinally on one or both sides, whether said brads are in the centre of the bar or near one edge, and with flattened spaces on one or both sides at regular intervals along the body of the bar, made by depressing the brads in certain places, without regard to the shape of the brads, so as to form clips and clevises, in the manner herein shown.

No. 48,700.—Thomas Mason, Boston, Mass.—*Vegetable Slicer.*—July 11, 1865.—This invention consists in combining with one cutter stock, carrying any desirable number of knives, a series of hoppers or conductors, each of which is so arranged with respect to the common cutter stock as to present the vegetable so that it shall be cut into slices of even thickness.

Claim.—The combination of the series of conductors *b* with the single rotary cutter stock *d*, arranged to operate together substantially as set forth.

No. 48,701.—John M. May, Janesville, Wis., and E. B. Godfrey, Oshkosh, Wis.—*Portable Fence.*—July 11, 1865; antedated June 23, 1865.—This invention consists in making a portable and stationary fence with a support that dispenses wholly with nails or spikes, the picket or piece that pins the panels or lengths of the fence together being at the same time a kind of key that binds the parts of the fence and its supports firmly together. By removing the picket key the panels of the fence and their supporting pieces fall apart, and the fence may be readily removed. The picket or piece that pins together the panels of the fence also serves as a pivot to form a kind of hinge or joint to allow the fence to be made in a curved or circular form, or in a straight line, without altering the manner of constructing the fence or its supports. The picket or piece that holds the panel of the fence together is so formed that when the joints of the fence become loose from the shrinking of the wood of which the fence is made they are made tight and firm by turning the picket in a horizontal direction, by which movement it acts as a key or wedge.

Claim.—First, picket C, or its equivalent, when used in constructing a fence, substantially as and for the purpose described.

Second, braces F F, or their equivalent, when made substantially as described and used in combination with picket C, or its equivalent, and base B, substantially as and for the purposes described.

Third, a hinge or joint, when formed by means of picket C, or its equivalent, and the perforated ends of rails, and supported by base B and braces F F, substantially as and for the purpose described.

No. 48,702.—W. McARTHUR, Philadelphia, Penn.—*Feather Renovator.*—July 11, 1865.—This invention consists of a cylinder divided into two parts, and provided with a shaft carrying long and short arms. The lower part of the cylinder is enclosed in a tight box, which is provided with pipes. The lower part of the cylinder has a steam chest attached to it, and communicates with said chest through an opening covered with wire gauze. The chest is provided with pipes, and the cylinder with the steam pipes and escape pipes. The upper portion of the cylinder may be raised, and the wire gauze frame inserted to prevent the feathers from being thrown out.

Claim.—First, the casing B, its shaft C, and arms *h* and *h*, in combination with the case A and the pipes *b c f* and *g*, or their equivalents, the whole being arranged and operating substantially as and for the purpose described.

Second, the combination of the casing B, chamber *d*, and perforated or gauze plate *e*.

Third, the frames D and E with their gauze or perforated plates adapted to the two halves of the casing B, substantially as and for the purpose herein set forth.

Fourth, the long and short tapering arms *h h'*, arranged on the shaft C, as set forth.

Fifth, the combination of the steam-tight box A and its pipes *f* and *b*, or their equivalents, with the casing B.

No. 48,703.—JAMES McCRUM, Locust Grove, Ohio.—*Carpenters' Gauges.*—July 11, 1865.—This invention consists of a loose head and spring applied to and connected with an adjustable head on a gauge bar, so that, by the action of the loose head and spring, the marking points will be guarded in the use of the gauge.

Claim.—The employment or use of the loose head D and spring E, or its equivalent, in combination with the bar B and adjustable heads A C, constructed and operating in the manner and for the purpose substantially as herein shown and described.

No. 48,704.—THOMAS W. McDILL, Perry, Ill.—*Cornstalk Cutter.*—July 11, 1865.—This invention consists of a suitable frame provided with a draught pole and a shaft having trilateral heads upon it, to which knives are attached at the angles or corners.

Claim.—The knives E attached to triangular heads D keyed on a shaft C, which is placed within a suitable frame A, and all arranged to operate in the manner substantially as and for the purpose set forth.

No. 48,705.—T. N. MORSE, Grattan, Mich.—*Wool Press.*—July 11, 1865.—The object of this invention is to put up fleeces of wool in square or nearly square form, so as to be easily handled and be capable of being packed for storage or transportation, in less space than is now required.

Claim.—First, a machine for binding fleeces of wool, constructed and operated as shown, having bands C, which are attached to and detached from the windlass by means of a bar W and groove Y, substantially as and for the purposes above set forth.

Second, the combination of the side leaves *a a*, transverse leaves C', and grooves *d' d'*, all constructed, arranged, and employed substantially as and for the purposes set forth.

No. 48,706.—J. F. BRICHARD, Milwaukee, Wis.—*Apparatus for Carburetting Air.*—July 11, 1865.—This invention consists of a metallic case provided with inlet tubes. Inside of this cylinder a series of metallic tubes, surrounded by fibrous tubes, are arranged, the fibrous tubes being attached to the upper and lower heads, and the metallic tubes to the upper head only. The apparatus is provided with a try cock.

Claim.—First, the vertical tubes *b* for exposing the fluid of the hydro-carbon to the current of air, substantially as herein recited.

Second, the arrangement of the vertical metal tubes *c*, or their equivalents, in relation to the tubes *b*, as herein described.

No. 48,707.—AARON CARVER, Little Falls, N. Y.—*Pump.*—July 11, 1865.—This invention consists of a double-action pump, the piston having two ball valves, the upper one of which relieves the lower of superincumbent water in the hollow piston rod. A ball valve at the bottom of the cylinder admits water to the lower piston valve. A series of small ball valves arranged in a circle around this, admits water around the pump cylinder, and within an outer cylinder to a point of ingress above the play of the piston, this outer tube being held to the inner at the bottom of an inverted cap. The section of tube next above descends between the lower pin until its inner and outer shoulders rest upon them, when a surround-

ing thimble screws down upon the outer lower cylinder and confines all in place. On the inside of this short section of tube there is an annular groove to receive and retain a spring collar surrounding the bottom piston rod, which collar drops into place as soon as it descends to this position, and can only be displaced by extending the play of the piston so as to bring its upper end against the lower part of said collar, when the piston may be withdrawn from the well to be again instantly replaced at will.

Claim.—First, the piston constructed substantially as described; that is to say, with a supplementary upper valve restraining the downward pressure of the contents of the piston rod or pump tube upon the lower valve of the piston, substantially as described and represented.

Second, so fitting the piston rod of a double-action pump to the working cylinder thereof as that it can be detached and withdrawn thereout and replaced thereon at pleasure, automatically, by increasing the length of the stroke substantially as described.

Third, separating the cylinder of a pump from the pump tube above by a removable inner collar, within which the piston top works, and which is capable of being detached so as to allow the piston to be withdrawn and replaced again after the piston is replaced, by means substantially as described.

Fourth, connecting the valve-box I, forming the lower part of the working cylinder, to the outer cylinder A3 by means of the screw *p*, constructed and applied substantially as above described.

No. 48,708.—J. C. Dean, Chicago, Ill.—*Dental Hammers.*—July 11, 1865.—This dental hammer is so constructed that the stock or handle for holding the plugging point is also adapted for receiving the hammer which is used for giving the required blow to said point, a spiral spring being located between the hammer and the head of the handle, in order to force the former forward when released against the plugging instrument. The releasing device is arranged to be situated at any desired point along the handle, so as to enable the spring to act with greater or less force upon the hammer, as may be required.

Claim.—First, the combination of the hammer D with the device for holding dentists' plugging points, substantially as described.

Second, providing for regulating the force of the blow of a hammer when the latter is applied to the holder of a plugging point, by means substantially as described.

Third, the combination of a tool-holder C, spring-hammer D, and the device or devices for actuating said hammer, substantially as described.

No. 48,709.—Charles W. Emory, Dorchester, Mass.—*Pipe Coupling.*—July 11, 1865.—This invention consists in forming a thimble tapering towards the end, and provided externally with large rounded screw threads, upon which the elastic tube is forced, and a tapering cap similarly threaded internally, which is screwed upon said thimble and over the distended tubes, the latter lying between the thimble and the cap, being thus forced to conform to the inequalities of the threaded portions, is firmly and tightly held.

Claim.—The combination of the thimble *a* with the screw-cap *c*, constructed and operating as herein described.

No. 48,710.—Addison C. Fletcher, New York, N. Y.—*Condenser.*—July 11, 1865.—This invention consists in the arrangement of a fan with reference to the radiators into which the exhaust steam from the engine is conveyed by suitable pipes. The exhaust fan is placed upon top of the case which surrounds the radiator, so that the air entering the spaces in the case between the radiator shall rise vertically through such apertures, and thus act in concert.

Claim.—The arrangement of the fan G, or its equivalent, and the inlet openings *a a* of the air-box B, substantially as herein described, in relation to the upright steam radiators A A of an apparatus for condensing steam and heating air, whereby there is produced over the surfaces of the said radiators an artificial upward circulation, in which the natural upward circulation is taken advantage of, substantially as herein set forth.

No. 48,711.—Alexander Fries, Cincinnati, Ohio.—*Distillation of Alcohol, &c.*—July 11, 1865.—This invention consists of a still heated by steam pipes, and connected with a U-shaped tube by means of a goose neck. The said tube is connected with a receiver by means of a goose neck, and the receiver is connected to an ordinary condensing apparatus by a goose neck. The vapor first passes from the still into the U-shaped tube, where the heavy portions are condensed and allowed to flow back into the still. The vapor then passes into the receiver, where condensation again takes place, the liquid being returned to the U-shaped tube by means of a pipe. The lighter vapors are finally condensed in the condensing room.

Claim.—The mode substantially as set forth of distilling purified spirits direct from the mash.

No. 48,712.—E. G. Niles, Cincinnati, Ohio.—*Cooking Range.*—July 11, 1865.—A water chamber is cast with the top plate at its rear part, and directly back of the upper part of the fire chamber. A supplemental fire grate is fitted in the top plate, directly over the fire chamber. The flues are so arranged that the products of combustion can be made to circu-

late around and under the ovens when desired, by which means air may be heated for warming apartments other than that in which the range is placed.

Claim.—First, the supplemental fire-grate E fitted in the top plate of the range directly over the fire-chamber B, arranged substantially as described.

Second, the water-chamber G cast with the top-plate D, and placed in relation with the fire-chamber B and supplemental grate E, substantially as described.

Third, the arrangement of the flues *b c* provided with partitions *d*, substantially as and for the purpose specified.

No. 48,713.—GEORGE NIMMO, Jersey City, N. J.—*Drying and Preparing Crucibles.*—July 11, 1865.—This invention consists in placing the crucibles on carriages at the cool end of a flue, and gradually forwarding them towards the fire, where they are prepared and ejected.

Claim.—First, drying and preparing crucibles by gradually moving them from the cool part of a flue toward the fire, either inside or outside said flue, on a carriage, or shifted by hand.

Second, the construction of a flue, in combination with carriages, as described, and for the purpose specified.

No. 48,714.—CHARLES NOBLE, New York, N. Y.—*Manufacture of Gas.*—July 11, 1865.—This invention consists in preparing gas from coal dust or waste coal, the coal dust being mixed with starch and formed into lumps, so that the heat may penetrate the mass in the retort evenly and uniformly.

Claim.—The employment or use in the manufacture of gas, of lumps produced from coal dust or waste coal, substantially in the manner and for the purpose set forth.

No. 48,715.—OTIA OLDS, Aurora, N. Y.—*Wheel for the Propulsion of Vessels in Shoal Water.*—July 11, 1865.—This invention consists in the combination of the ground wheel with its supporting frame and hand wheel, which operates upon the ground wheel so that a purchase may be obtained to lift upon the bow of the boat.

Claim.—The combination of the traction or ground wheel H with the compound frame A B (including the hand wheel I and lifting ropes and pulleys) so that a purchase may be obtained to lift upon the bow of the boat, substantially as described.

No. 48,716.—JOSEPH C. PAINE.—Dubuque, Iowa.—*Stove-pipe Drum.*—July 11, 1865.—Inside the drum and surrounding the inner cylinder is a cone-shaped chamber, its closed apex being near the bottom, and its closed base near the top. Pipes convey cold air into this chamber at a point near its apex, and through pipes in its base the heated air escapes. Between this and the outer casing is another chamber, so that by closing a damper in the top of the inner pipe the circulation flows through this chamber to the exit pipe, being directed in its passage to and from the outer casing by deflectors on the outside of the cone-shaped chamber, and one inside of the outer casing.

Claim —The combination of cone A2, within the drum, with the hot air-chamber B″ B″, the tubes or pipes D″ D″ and E″ E″, the double deflectors G″ G″, and the double damper F1 F2, for the purpose and in the manner set forth.

No. 48,717.—STEPHEN A. POTTER, Philadelphia, Penn.—*Pen Distributor.*—July 11, 1865.—This invention consists of a case with drawers, having partitions to divide the pens, and spring catches to hold them when closed.

Claim.—The peculiar construction and combination of a case of drawers, so arranged with partitions H H, divisions A A, catches C C, or their equivalents, for the purpose and in the manner substantially as shown and described.

No. 48,718.—S. SAFFORD PUTNAM, Dorchester, Mass.—*Washing Machine.*—July 11, 1865.—This invention consists of a vessel provided with a series of buckets so arranged and inclined upon its sides that the series of buckets on one side shall incline upwards, while the series on the opposite side shall incline downwards, and the series on the bottom shall incline from right to left, while that on the top shall incline in an opposite direction, so as to form buckets for dipping up and throwing water over the clothes, and at the same time to turn and rub them.

Claim.—A receptacle, having a series of buckets so arranged and inclined upon its sides as that the series on one side shall incline upward, while the series on the opposite shall incline downward, and the series on the bottom incline from right to left, while the series on the top shall incline from left to right, so as to form buckets for dipping up and throwing the water over the clothes, as well as to turn and rub them, as herein set forth.

No. 48,719.—WILLIAM J. RAND, Brooklyn, N. Y.—*Preparation of Desiccated Vegetable Extracts.*—July 11, 1865.—This invention consists of a digester, surrounded by a steam jacket, and connected to the receiver by means of a pipe which is provided with strainers. A vacuum pan is connected with the receiver by means of a pipe. The material to be operated upon is placed in the digester and subjected to the action of boiling water, under a

pressure greater than that of the atmosphere. The material is then forced through a pipe into the receiver, the solid matter being retained by the strainers. When the strained product has all passed into the receiver, a vacuum is produced in the pan and the extract is allowed to flow into said pan. The extract, after being sufficiently concentrated in the pan, is removed and desiccated by any known process.

Claim.—As an improvement in the process of obtaining desiccated or highly concentrated juices or soluble extracts of animal or vegetable substances, first obtaining the juices or soluble extracts of such substances by heating or boiling them under a pressure greater than that of the atmosphere, and afterward straining and concentrating the juices or extracts so obtained by evaporation in vacuo, substantially as herein described, whereby to obtain in the concentrated or desiccated product all the soluble or reducible matters contained in the substances.

Also, forcing the juices, extracts or reducible substances obtained by the digestion of animal substances through strainers, by means of the pressure of steam in the digester, substantially as herein specified.

Also, the steam pipe H, and its cock *a*, and the stop valve or cock G, applied in relation to each other and to the digester and receiver, and in combination with the pipe C, substantially as and for the purpose herein specified.

Also, the combination of the digester A, pipe C, one or more strainers E, receiver D, and vacuum pan I, the whole arranged and operating substantially as and for the purpose herein specified.

No. 48,720.—Franklin Ransom, Buffalo, N. Y.—*Pump.*—July 11, 1865.—This invention consists of a double-action pump, operated by a solid piston in a vertical cylinder. In the ascent of the piston water enters below, having ascended through a vertical pipe to a line nearly parallel with the top of the pump cylinder, and thence through a trough on this line to the cylinder, and thence down nearly to the bottom of the cylinder, where it enters. In the descent of the piston, water enters near the top of the cylinder, through a trough parallel with the above-mentioned trough. Beneath the ends of these troughs, remote from the cylinder and piston, water is received alternately from a single pipe, and above is discharged alternately into a single chamber.

Claim.—The arrangement of the inlet valves I I′, and the divided chamber C, having two compartments of greater capacity than the displacement of the piston, in combination with each other and with the cylinder of the pump, substantially as and for the purpose herein specified.

No. 48,721.—Joseph Regester, Baltimore, Md.—*Cock.*—July 11, 1865.—A hat-shaped cap of India-rubber has its brim clamped by a screw cap. In the bottom of this cap rests a rigid valve. The screw plug descends upon this valve and forces it to its seat.

Claim.—First, the elastic capsule as arranged with the valve stem of a stop cock, substantially as described.

Second, seating the lower end of a valve stem loosely upon a valve *d*, having its support upon a soft packing, substantially as described.

No. 48,722.—E. Y. Robbins, Cincinnati, Ohio.—*Ventilating Apparatus.*—July 11, 1865.—The chamber around the furnace communicates by a direct flue with a hollow space under a metallic or tiled floor, and circulating through this, passes by another flue back to the chamber. Outside this is another chamber, supplied with external air, and communicating by flues with registers in the apartment which has the tiled or metallic floor space.

Claim.—First, the arrangement for warming the floor or portions of the floor, by causing the hot air from the furnace to circulate through a hot air-chamber C, and return to the bottom of the furnace through the return pipe or flue D, substantially as set forth.

Second, the construction of the outer fresh air or warm air channel *x*, Fig. 1, entirely separate and distinct from the inner or hot air channel *y*, the air in the latter, heated by contact with the hot surface of the iron, being excluded from the room, and only used for carrying heat to the hot air-chamber beneath the floor or in the wall, while the air from the former, *x*, being warmed entirely by contact with the outer surface of the brick or earthen wall or casing *a*, is conducted into the room for respiration.

No. 48,723.—Benjamin Robinson, East Gloucester, Mass.—*Apparatus for Curing and Drying Fish.*—July 11, 1865.—This invention consists in combining with a flake frame, upon which the fish are laid, screens on slatted frames, so constructed and arranged that the fish may be wholly protected from the weather, and more or less screened from the rays of the sun, as circumstances may require.

Claim.—The combination with a fish flake of a screening frame, arranged to operate substantially as and for the purpose set forth.

No. 48,724.—Timothy Rose, Cortlandville, N. Y.—*Water Wheel.*—July 11, 1865.—This wheel is adapted to operate in a vertical as well as in a horizontal position. It is formed of a central drum, to the sides of which angular or zigzag floats or buckets are attached transversely. At the top and bottom these floats assume a gentle curve, and terminate in a

horizontal line, where they are bounded by a rim which confines and gives direction to the flow. The course of the wheel may be reversed by turning it end for end in its position.

Claim.—The central angular floats or brackets *b b*, in connection and combination with the reversed end brackets *e e*, as above set forth, and working in the manner herein described.

No. 48,725.—HENRY RÔTHFELDER, New York, N. Y.—*Watches.*—July 11, 1865.—This invention consists in forcing loosely on the arbor of the spring barrel a lever upon which is fixed a spring pawl, which gears and holds the teeth of a toothed wheel upon the winding arbor. By giving to the lever an oscillating motion, the spring is wound up. If desired, the winding lever can be attached to the shank which slides in a mortise on the periphery of the case. The minute wheel is turned by means of a key fitted to the square end of its shaft.

Claim.—First, the combination of the winding lever with the ratchet wheel and spring barrel, in the manner specified.

Second, the shank, fitted to slide in a mortise through the periphery of the case, in combination with the winding lever, spring barrel and ratchet, as set forth.

Third, the arm or crank *z*, affixed to the square for the minute hand, by which to set the watch, as specified.

No. 48,726.—HENRY ROTHFELDER, New York, N. Y.—*Chronometer Escapement.*—July 11, 1865.—This invention consists in the employment of a locking lever provided with a jointed spring arm, which is acted upon by the pallet or change pin of the balance wheel which moves the lever and disengaging detent, thus allowing the escape wheel to move and at the same time give an impulse to the balance by acting upon its notched roller or pallet.

Claim.—The arm J jointed to the lever F and provided with a spring, as set forth, in combination with the change pin D, detent E, and escapement, as specified.

No. 48,727.—LOUIS SAARBACK, Philadelphia, Penn.—*Pocket-books.*—July 11, 1865.—This invention consists of an elastic metallic band to be clasped around a pocket-book, having bent ends, one of which fits into the other in order to produce the clasp, and two rings, one on each side, against one of which a finger bears when the band is to be unclasped, and against the other a thumb, so that by a slight pressure one bent end of the band is caused to escape from the other.

Claim.—The elastic metal band or strip B, combined with and arranged in respect to a pocket-book or portmonnaie in the manner described, and having bent ends adapted to each other, as and for the purpose set forth.

No. 48,728.—JOHN SEARLE, San Francisco, California.—*Process of Imparting Age to Wines.*—July 11, 1865; antedated June 15, 1865.—This invention consists in placing the wines in casks or tanks, through which a steam-pipe is passed and subjecting it to the action of heat. The temperature is regulated by means of stop-cocks attached to the pipes.

Claim.—The introducing the heat by steam or otherwise to the wine itself by means of metallic pipes or chambers passing through the casks or vessels, substantially as set forth.

No. 48, 729.—CHRISTIAN SHARPS, Philadelphia, Penn.—*Projectile for Rifled Fire-arms.*—July 11, 1865.—The projectile belongs to the class, provided with webs or fins, designed to enter the rifle grooves of the barrel, and the peculiarity consists in causing the body of the ball to taper from its base toward its point, while the projecting webs or fins bounded externally by a cylindrical or parallel surface have their edges inclined to each other so as to run out in a point about midway of the length of the tapering projectiles.

Claim.—The within described projectiles, having a body tapering from the rear toward the front end, in combination with the wedge-formed projections *a*, the whole being constructed and adapted to the bore of the barrel and to the case B, substantially as and for the purpose herein set forth.

No. 48,730.—THOMAS SHAW, Philadelphia, Penn.—*Low-water Signal.*—July 11, 1865.—This invention consists in combining with the whistle and a chamber for the reception of the same a composition of animal or vegetable substance sufficiently hard to resist the water pressure of the boiler, but which will melt at a temperature of from 160° to 200° Fahrenheit, so that, in the event of the water falling below the end of the pipe to which it is attached, the steam will melt the composition and the whistle will be sounded, and thus call the attention of the person in charge to the condition of the boiler.

Claim.—The described apparatus in combination with described animal or vegetable substance when used for the purpose set forth.

No. 48,731.—JOHN SILVERS, Lambertsville, N. J.—*Flax-pulling Machine.*—July 11, 1865.—In this machine the flax is drawn in by an elastic belt running over a drum, also covered with rubber to prevent the flax from slipping. The flax is turned towards the belt by a wooden arm As the drum rotates it carries the flax out of the ground and over upon the platform of the machine.

Claim.—First, the use of one or more elastic belts or bands, made of India-rubber or gutta percha, or of any of their respective elastic compounds, or of any other suitable elastic material, for the purpose specified.

Second, coating the drum between which and the belt the plants are clasped, as described, with a sheet or surface of India-rubber or any other suitable elastic material, for the purpose specified.

Third, the use of the covered bar X, attached to or forming a part of the platform of the machine, and arranged with regard to the drum thereof by which the plants are pulled, substantially as herein described and for the purposes specified.

Fourth, passing the elastic belt around a pulley or pulleys, when fixed within the frame *a*, and adapted to be turned by means of the shaft *b*, and retained in the desired position by the ratchet wheel *c*, and pawl *a*, whereby the tension of the said elastic belt may be varied, as described.

No. 48,732.—HAMILTON E. SMITH, Cincinnati, Ohio.—*Petroleum Stove.*—July 11, 1865.—In the oven and boilers, which are situated directly over the lamps, are separate hot-air chambers with ventages for spent air at their bottom only. The oven can be subdivided by a vertical partition so as to call for the employment of but one burner. On this partition are cleats corresponding with those on the side of the oven, on which shelves can be placed.

Claim.—First, the series of petroleum or coal-oil burners B B′ B″ B‴, in connection with a corresponding number of separate hot-air chambers or series G and N, having ventages for spent air at their bottom portions only, substantially as set forth.

Second, in connection with two or more independent burners B B′, the oven G, capable of vertical subdivision in the manner and for the purpose explained.

Third, in the described combination with a petroleum stove, in this connection, the tubular hot-air chambered boilers, whose ventage for the spent air is at the bottom of the air-chambers, as set forth.

No. 48,733.—ADAM SNYDER, Clyde, Ohio.—*Fruit Dryer.*—July 11, 1865.—This device consists of a series of chambers made of sheet metal with perforated bottoms and placed one above the other, in any number required. The lower chamber is fitted upon a stove which is divided nearly in the middle by a horizontal diaphragm, in the centre of which are apertures for the flow of heat controlled by dampers.

Claim.—The employment of one or more fruit-drying sections in combination with the regulating diaphragm, substantially in the manner and for the purpose herein shown and described.

No. 48,734.—ALFRED F. SPAULDING, Winchendon, Mass., and SALMON M. SCOTT, Worcester, Mass.—*Meat Chopper.*—July 11, 1865.—This invention is explained by the claim and engraving.

Claim.—In the above-described meat-chopping machine the combination of the four cranks *k l m p*, and the connecting rod *a*, or the mechanical equivalents thereof, with the remainder of the mechanism or its equivalent, for operating the knives, the whole combination being productive of a compound motion of each knife, substantially as described.

Also, the combination of the plough *g*, or the same and the guard *v*, with the rotary tub and one or more knives provided with mechanism for moving such knife or knives up and down in the tub.

No. 48,735.—A. STEINBACH, Evansville, Ind.—*Horse Collar Fastener.*—July 11, 1865.—This invention consists in the application of two plates at the two ends of the upper part of the collar, one of these being a projection to enter into a slot made in the other, the said slot being provided with a ledge at each side.

Claim.—The plate A, attached to one side or part of the upper part of the horse collar, and provided with the slot C, having an enlarged part, and an inclined ledge *c* at each side as arranged with the plate D, attached to the other side or part of the collar, and having a bar or arm E, provided with a projection or lip *g*, at each side of its outer part, substantially as and for the purpose set forth.

No. 48,736.—ISAAC STEPHENSON, Marietta, Wis.—*Sleighs.*—July 11, 1865.—In this sleigh, each runner, instead of being one rigid piece, is divided into two parts, connected by a hinged joint. The forward part of the runners is connected to the body of the sled by an eyebolt; the rear part by guide bars attached to the bottom of the box and traversing pieces attached to the bolster.

Claim.—First, hinging the ends of the runners to each other, substantially as herein set forth and shown.

Second, the guide bars and traversing pieces constructed and operated as herein recited and shown, in combination with the hinging of the runners to each other as herein described.

No. 48,737.—J. E. STEVENSON, New York, N. Y.—*Water Wheel.*—July 11, 1865.—This invention consists of a horizontal wheel, the buckets of which extend about half-way from the periphery to the hub. The bottom of each bucket forms the arc of a large circle, until

near the lower extremity, where it leaves that line and dips. The wheel is attached to a hollow shaft, and revolves around a fixed spindle, resting upon the frame below. Near the top the fixed spindle enlarges to form a socket within an expansion of the hollow shaft, and from the top of this shaft an adjustable pin enters the socket. Upon this pin the wheel revolves within said socket, the edges of a coil of steel forming the step. The flume is a helix of diminishing capacity, its diameter being slightly larger than that of the wheel. In the area within it, and over the hub a cross head serves to sustain and centre the shaft, having an adjustable arrangement regulated by set screws.

Claim.—First, the curving of the lower parts of the buckets K of the wheel, substantially as and for the purpose herein set forth.

Second, the exposing of the lower parts of the buckets by having the rims *m m* of the wheel at their lower ends cast or formed with recesses, substantially as described to admit of a free lateral discharge of the water from the issues.

Third, the spiral or coil-shaped step G, in connection with the tubular shaft E, fixed spindle A and screw H, with or without the bearing J, substantially as and for the purpose specified.

Fourth, the laterally enlarged helix B, provided with the bevelled or inclined plates *l l*, or their equivalents, for the purpose set forth.

Fifth, the employment or use of a screw J, when applied to or used in connection with a wheel provided with a tubular shaft and a helix, in such a manner that the joint or space between the wheel and helix may be regulated as occasion may require.

Sixth, the combination of the wheel *d*, provided with the buckets curved at their lower ends or issues, and laterally exposed, the tubular shaft E, fixed spindle F, screw H and bearing J, all arranged substantially as described.

No. 48,738.—Thomas L. Sturtevant, Boston, Mass.—*Coal Stoves.*—July 11, 1865.—The open top chamber in upper part of the stove is surrounded by the space between its cylinder and the outer case in and through which the products of combustion circulate from the fire. Pipes communicating with the external air pass from the bottom plate through the fire-pot, and open into said chamber. Horizontal pipes open at both ends, and pass through the side of the stove into this chamber.

Claim.—The improved stove as constructed, not only with the radiator B and smoke space D about the same, arranged with the fireplace T and ash-pit F, as specified, but as provided with a series of air pipes H H H, leading into the radiator and going through the fireplace, and with respect to the fire-proof lining thereof, substantially as specified.

Also, in combination with the stove so made, the series of lateral air pipes *b b b*, leading out of the lower part of the ventilator and opening through the sides of the case, as specified.

No. 48,739.—Wm. A. Sweet, Syracuse, N. Y.—*Furnace for Melting Metals.*—July 11, 1865.—This invention consists of a series of open top chambers with places for setting crucibles, so that in melting metals the crucibles may be gradually moved from the cooler at the bottom end of the furnace. The grate bars are made in the form of a cone inside.

Claim.—So constructing a melting furnace that the temperature of the crucibles can be increased from a minimum to a maximum degree by transferring them from the cooler to the hotter chamber, substantially as described and for the purposes set forth.

Also, the combination and arrangement of the conical grate and feeding aperture, substantially as described and for the purposes set forth.

No. 48,740.—Wm. E. Terry, Wyoming, N. Y.—*Process for Tanning.*—July 11, 1865.—This invention consists in treating the hides which have been unhaired by means of lime and ashes with a bate or liquor, containing acetic acid, the liquor being prepared from the lees of cider or wine, or any fruit or refuse thereof. After bating the hides are soaked in pure soft water, and worked with the fleshing knife on a beam. They are then treated with a tanning liquor, composed of polygonum punctatum or smartweed, mentha viridis or spearmint, and oak, hemlock, sumach, or other bark, with or without the addition of comptonia asplenifolia, or sweet fern, and water.

Claim.—The process of tanning by means of liquors composed of the several ingredients herein named, when combined in the proportions and employed substantially in the manner herein described.

No. 48,741.—Jonathan H. Tibbetts, Omaha City, Nebraska—*Piano-forte Action.*—July 11, 1865.—This invention consists in an arrangement of parts with a rotating wheel, for the purpose of obtaining a quicker and easier action than usual.

Claim.—The use in piano-forte actions of a rotating wheel, arranged and operating substantially as and for the purpose specified.

No. 48,742.—A. W. Tooker, Harvard, Ill.—*Hay Elevator and Stacker.*—July 11, 1865.—This invention consists in so constructing a stacker as to do away with the centre turning post, using a tripod and beam, or arm, so constructed that as the horse walks from the machine the load is elevated and carried to the place of deposit, and in returning the elevator is brought back to the starting point.

Claim.—First, the combination of the crane beams *g g* with a tripod, which is supported upon a foundation frame, when said beams are supported by and applied to their frame substantially as described.

Second, the arrangement of the rope *h* upon a stacker, which is constructed without a central turning post, in such manner that the movements of the horse can be made to effect the raising of the load and the turning of the crane arms, substantially as described.

Third, the use of an adjustable hitching hook A, in combination with a crane *g g*, or its equivalent, and the rigging *h*, arranged to operate substantially in the manner and for the purpose described.

No. 48,743.—CYRUS L. TOPLIFF, New York, N. Y.—*Wick Trimmer.*—July 11, 1865.—This invention consists of a fixed cutter and a movable one, placed in parallel planes to trim lamp wicks. Combined with said cutter is a handle so pivoted as to operate in a plane with the knife, and to move and act at right angles thereto.

Claim.—First, the combination of the fixed cutter *m* and movable cutter *f*, arranged in parallel planes, and operating substantially in the manner and for the purposes specified.

Second, in combination with the aforesaid cutters *f* and *m*, the handle when so pivoted as to move in a plane parallel or coincident with that of the knife *f*.

No. 48,744.—GEORGE E. VAN DERBURGH, New York, N. Y.—*Artificial Building Block.*—July 11, 1865.—This invention consists of a composition formed by mixing clean damp sand and powdered quicklime together, in the proportion of one part of lime to ten or twelve of sand. The sand partially slacks the lime, and the whole is then dampened and formed into blocks by means of pressure in moulds.

Claim.—As a new article of manufacture blocks of artificial stone, formed substantially in the manner herein set forth.

No. 48,745.—GEORGE E. VAN DERBURGH, New York, N. Y.—*Silicated Building Block.*—July 11, 1865.—This invention consists of a mixture of sand and lime moistened with liquid silica, and formed into blocks by pressing in suitable moulds.

Claim.—As a new article of manufacture a silicated building block, formed substantially in the manner herein set forth.

No. 48,746.—GEORGE E. VAN DERBURGH, New York, N. Y.—*Artificial Stone.*—July 11, 1865.—This invention consists of a composition made by mixing with the lime and silicious matter, forming the usual bases of artificial stone, sufficient finely pulverized sand, marble or its equivalent material to fill all the interstices between the ordinary sand and coarser ingredient in the composition.

Claim.—The special improvement in the production of blocks, tubes, tiles, and other articles of artificial stone, by the use of finely pulverized sand, marble, or other equivalent analogous substance, in combination with the other materials employed in the formation of such artificial stone, for the purpose of filling the interstices between the individual particles thereof, substantially as herein set forth.

No. 48,747.—GEORGE E. VAN DERBURGH, New York, N. Y.—*Solution for Saturating Natural and Artificial Stone.*—July 11, 1865.—This invention consists of a composition formed by the admixture of liquid silicate with lime-water in the proportions of one gallon of silicate, and from three to six gallons of lime-water. In order to obtain the largest possible amount of lime in solution, the water may be sweetened with saccharine matter before adding the lime thereto.

Claim.—The within-described silicated composition, for the purpose of saturating natural and artificial stones, or as an ingredient in the formation of the latter, substantially as herein set forth.

No. 48,748.—IZAAK VAN KERSEN, Kalamazoo, Mich.—*Stump and Grub Extractor.*—July 11, 1865.—This invention consists of a tilting cart or dray, convertible into a stump-pulling machine. For this purpose at the rear end of the cart frame is inserted, and to it is fulcrumed, what is termed a strut lever, which is usually constructed of oak plank, the side pieces being just far enough apart at the top to admit a pulley block between them, and diverging at the bottom to the width of the cart. This strut lever having been set up at the side of a stump, and suitably fastened thereto, is drawn downward by force applied at its top by the draught cattle, and at the same time the stump is drawn upward.

Claim.—The combination of the grub or stump pulling lever L and its attachments with the two-horse cart or dray, the whole being arranged, constructed, and operated substantially as and for the purposes herein specified.

No. 48,749.—SIGOURNEY WALES, Boston, Mass.—*Windows.*—July 11, 1865.—The object of this invention is to enable a sash of a window to be readily removed from the frame, in order that the glass may be easily washed or cleaned. The claim and engraving indicate the application of this device to a window sash.

Claim.—The combination and arrangement of the bar D, and its fastening bolts and catches, or their equivalents, with the window frame and the sash, the same being for the purpose as specified.

Also, the combination of the flange or rib *f* with the bar D and the sash applied together and to the window frame, as described.

No. 48,750.—S. WARD, Lane, Ill.—*Corn and Cane Harvester.*—July 11, 1865.—This invention relates to means for stripping blades from the stalks, gathering stalks to the cutter, and discharging the same when cut in gavels, the tops having been previously cut off by a revolving knife at the rear of the machine.

Claim.—First, the bars or beaters J J, arranged to operate in vertical planes in front of and above the sickle D, substantially as and for the purpose specified.

Second, the arms K K, arranged to operate in horizontal planes, and in the described relation to the sickle D, for the purpose set forth.

Third, the bed G*, composed of the two shafts *g g*, provided with the arms *h*, and arranged with cords or chains H H, for the purpose of discharging the cut cane or corn in gavels from the machine, substantially as described.

Fourth, the arrangement of the bars or beaters J J, arms K K, in combination with the sickle D and bed G*, with or without the guard N, combined and arranged to operate in the manner substantially as and for the purpose set forth.

Fifth, the knife P, arranged to operate at the rear of the bed G*, substantially as and for the purpose specified.

No. 48,751.—M. D. WELLMAN and JAMES OLD, Pittsburg, Penn.—*Coal Stove.*—July 11, 1865.—The lower part of the stove is hemispherical in shape with the grate, which is double reciprocating at the bottom or its greatest diameter.

Claim.—First, making the fire-pot of close stoves with its greatest diameter at the level of the fire-bed or grate, and contracting upwards, substantially as and for the purposes hereinbefore described.

Second, the use in close stoves, in combination with a fire pot constructed as hereinbefore described, of a double-perforated grating, the lower part of which is stationary, the upper part turning thereon for the double purpose of raking the fire and regulating the admission of air to the fire, substantially as hereinbefore set forth.

No. 48,752.—M. D. WELLMAN and JAMES OLD, Pittsburg, Penn.—*Fireplace.*—July 11, 1865.—In this device there are recesses in the back and side walls of the fireplace, or either of them, the top of which is below the level of the top of the fire basket, and also flues or spaces in the side walls to prevent the packing of the coal. There are slots between the grate bars governed by a convenient device, so that they may be opened or closed at will. In the back and side walls and in the throat of the chimney are chambers whence the hot air may be directed as desired.

Claim.—First, the use of recesses in the back and side walls of the fireplace, or in either of them, the top of which is below the level of the top of the fire basket, in combination with flutes in the fire walls, for the purpose of preventing the packing of the fuel at the back and sides of the fire, and thus giving the air access to the back part of the fire, and allowing it to pass up the flutes so as to mingle with the unconsumed gas and smoke, substantially as described.

Second, the combination of a low grate or fire basket *p*, having slats between its bars, with the air spaces or recesses *v* in the back wall, and overhanging back plate *d*, for the purpose hereinbefore described.

Third, the arrangement of a hot-air chamber or chambers in the back and side walls of a fireplace, and the sloping or overhanging back wall and air passages in the rear of the fire chamber, for the purpose of more readily heating the air passing through such chambers to warm the apartment, substantially as hereinbefore described.

Fourth, the use of one or more hot-air chambers, constructed substantially as described, and placed in the throat of the chimney, so that the smoke and hot air passing up the chimney shall play around or upon them, and thereby heat the air passing through them, for the purpose hereinbefore set forth.

No. 48,753.—D. WHITAKER, Roxbury, Mass.—*Construction of Soap Frames.*—July 11, 1865.—This invention consists of a soap frame made in two parts, joined together at their edges by means of bolts. The sides of said frames are strengthened by means of corrugated plates of wrought iron or other suitable material.

Claim.—As a new and improved article of manufacture a soap frame, made of wrought iron, having its side plates corrugated, and formed in two parts or sections, substantially in the manner described and for the purpose specified.

No. 48,754.—N. P. WHITTELSEY, West Meriden, Conn.—*Toy Gun.*—July 11, 1865.—This invention is sufficiently described by the claim and drawing.

Claim.—First, the combination of the barrel *b*, enlarged at its inner end, arranged within the stock *a*, having the depression *t* with the ferrule *i*, substantially as and for the purpose described.

Second, as an improved article of manufacture of a toy gun, the combination of the stock *a*, barrel *b*, spring *c*, rod and hammer *d e*, with the ferrule *i*, arranged and operating substantially as described.

No. 48,755.—CHARLES T. YOUNG, Lawrence, Mass.—*Felted Cloth.*—July 11, 1865.—This invention consists of a felted fabric, composed of linen and wool. The fabric is made by enclosing a linen bat between two bats of wool in the process of felting.

Claim.—First, the arrangement and construction of the frame A *a*, with the rubber springs *g g*, disks C C′ *h*, and shaft *c*, substantially in the manner described and represented.

Second, the arrangement of the bevel-faced grindstone B, with the several parts named in the first claim, as herein described.

No. 48,756.—JOSEPH WOODWARD, assignor to J. S. ULTEY, New York, N. Y.—*Ruler and Paper Cutter.*—July 11, 1865.—This invention is explained by the claim.

Claim.—The ruler and paper cutter herein described, having a straight outer ruling edge *a*, and two united straight inner cutting edges *b c*, forming a continuous rectangular cutting edge.

No. 48,757.—CHARLES T. YOUNG, Lawrence, Mass.—*Felted Cloth.*—July 11, 1865.—This felted cloth is made as follows: the wool or other fibrous substance capable of being felted, after having undergone the usual preliminary processes is wound in a thin sheet or "bat," upon a long bobbin. Any non-felting substance is also prepared in a similar manner, and wound upon a bobbin. Two rollers containing the felting and one containing the non-felting fibre are now so placed in a frame, that as the "bats" are drawn off, the non-felting shall become enclosed between the two felting bats.

Claim.—The felted cloth herein described, the same being a new article of manufacture.

No. 48,758.—L. G. YOUNGS, Wilmington, Ill.—*Cultivator.*—July 11, 1865.—This invention consists in providing a shaft at the rear of the ploughs with bent rectangular loops; revolving this shaft brings up the loops, and with them the ends of the plough beams are raised.

Claim.—The plough-bars E E E′ E′ and shaft J, provided with the loops I I and arms *f f*, all arranged and applied in connection with the levers K′, to operate in the manner substantially as and for the purpose set forth.

No. 48,759.—WILLIAM ZIMMERMAN, Quincy, Ill.—*Revolving Mortise Tool.*—July 11, 1865.—This is a revolving tool for making slots or mortises, upon one or more of the cutting edges of which teeth are made by grooving the surface in the form of a screw thread, whereby it is claimed the tool is enabled to cut faster and more easily than if the cutting edge were straight.

Claim.—The new article of manufacture described, to wit, a rotating mortising or slotting tool with teeth on the cutting edges, substantially as described.

No. 48,760.—J. K. ANDREWS, Antrim, Ohio, assignor to himself and J. C. TILTON, Pittsburg, Penn.—*Lamp.*—July 11, 1865.—This invention consists in the employment of two perforated cylinders, one inside the other, and connected together by wires extending from the inner to the outer cylinder, in combination with an ordinary kerosene lamp burner, in such a manner that by the air admitted through the perforations of the two cylinders and by the draught occasioned by the same the smoke and surplus carbon is consumed, and a burner is obtained which gives a brilliant and odorless light without the use of the ordinary glass cylinders.

Claim.—The application of the two cylinders C D, made of perforated sheet metal, or other equivalent material, and secured one inside of the other, on a lamp burner A, of the ordinary construction, substantially as and for the purpose herein shown and described.

No. 48,761.—EDWIN BENNETT, assignor to himself and W. T. GILLINDER, Philadelphia, Penn.—*Annealing Furnace.*—July 11 1865.—This invention relates to annealing furnaces for glassware, and consists in placing the furnace so as to have it discharge its heat at such a point between the feed and the ends of the leer, so that the heat shall be graduated towards both ends. Trays are also used for charging and discharging the leer.

Claim.—First, placing the furnace so as to discharge its heat at such a point between the feed and discharge ends of the leer, as that the heat shall be graduated towards both ends, for the purpose described.

Second, the use of the trays F, for the purpose of receiving the ware, and for charging and discharging the leer.

No. 48,762.—THOMAS CROSSLY, Bridgeport, Conn., assignor to the AMERICAN WATER-PROOF CLOTH COMPANY, Brooklyn, N. Y.—*Manufacture of Water-proof Fabrics.*—July 11, 1865.—This invention consists of a back of linen or other material, upon which is spread

a coating of India-rubber or gutta-percha. A warp of silk or woollen material is then prepared and fastened to one end of the back. A wire or rod is then placed upon the inside rubber surface, and the warp is carried over said wire and pressed down, and so on until the carpet is completed. The loops thus formed may be cut or allowed to remain, thus forming a velvet or a Brussels carpet as may be desired.

Claim.—First, a fabric composed of a back of linen, jute, or other material, having a coat of rubber or other gum, upon which is fastened a face of yarn, of silk, worsted, woolen, fur, or other material, the same being looped or tufted as described.

Second, a fabric made as described, and colored, dyed, or printed, or colored and dyed and printed, either before or after the face is applied, in the manner and for the purposes herein set forth, as a new article of manufacture.

No. 48,763.—WILLIAM W. DRAPER, assignor to himself and ALONZO PARKER, Greenfield, Mass.—*Tool Stock.*—July 11, 1865.—This invention consists, first, in giving to the brace greater space between the two ends, or axial portions, than is given in the ordinary brace, and to accomplish this the two upper bends are at an angle of about forty-five degrees, by this means giving more room to the wrist and arm when operating the brace. Secondly, in the mode of securing the bit in the socket, by means of clamping jaws pivoted at their middle to a screw-nut playing on a thread around the outside of the socket, and their inner ends against a cone-shaped enlargement of said stock, by which, as the nut is screwed up, the outer ends of the jaws are made to close around the neck of the bit and draw it into the socket.

Claim.—The combination of the screw-shank, constructed as specified, and conical wedge, with the enclosed nut and clasping jaws *f*, the whole arranged to operate as described, for the purpose set forth.

Also, the peculiar shape of the arm-piece B B′, as shown, for the purpose set forth.

No. 48,764.—W. E. FROST, assignor to I. WASHBURNE and P. L. MOEN, Worcester, Mass.—*Sizing and Finishing Covered Skirt Wire.*—July 11, 1865.—This invention is explained by the claim.

Claim.—Sizing and finishing covered wire (or covering strips of metal of considerable length) in causing it to pass continuously through a sizing mixture, and over rolls, or their equivalents, while subjected to heat, and thence on to a reel, or other receiver, substantially as described.

No. 48,765.—W. E. FROST, assignor to I. WASHBURNE and P. L. MOEN, Worcester, Mass.—*Sizing and Finishing Covered Skirt Wire.*—July 11, 1865.—This invention will also be understood from the claim.

Claim.—Passing the wire through the starch or size, and thence directly in contact with ironers or polishing surfaces, substantially as described, for the purpose set forth, whence it may be passed over rolls and heaters previous to its being reeled.

No. 48,766.—W. E. FROST, assignor to I. WASHBURNE and P. L. MOEN, Worcester, Mass.—*Sizing and Finishing Covered Skirt Wire.*—July 11, 1865.—The covered braided wire is caused to pass from the supply reel through the sizing medium, and back and forth over drums, and thence back through the sizing medium again to the second coat, and so on as many times as may be desirable, by which means successive coats of size, one over the other, may be applied.

Claim.—Causing the covered or braided wire to pass from the supply reel through the sizing medium, and back and forth over drums, and thence back through the sizing medium again to the second coat, and so on any number of times desired, for the purpose of applying successive coats of size, one over the other, in the manner substantially set forth.

No. 48,767.—ANDREW J. GOVE, San Francisco, Cal.—*Mast Coat.*—July 11, 1865.—This mast coat is made of brass, copper, or other metal, between which and the mast are rings of gutta-percha. This construction is claimed to be a great improvement over the common canvas mast coat.

Claim.—The metallic shield E, and the flexible joint formed by the rings G G′, or their equivalents, attached to the shield and the deck respectively by the metallic rings S″ S″, or in any other suitable manner, substantially as described, and for the uses and purposes hereinbefore set forth.

No. 48,768.—D. S. GRAY, Onargo, Ill.—*Bee-hive.*—July 11, 1865.—The bottom of this hive is made inclined, and is provided with slides so that the dirt which falls from within the hive upon the bottom may be easily removed. The slides, connected with the inclined bottom, are gotten at through a sliding door in the side of the hive.

Claim.—In combination with the inclined bottom B, and sliding door E, constructed and arranged as described, the slides D, for facilitating the removal of filth, &c., from the hive, as explained.

No. 48,769.—T. F. HAMMER, Branford, Conn., assignor to G. J. HINE, New Haven, Conn.—*Machinery Clutch.*—July 11, 1865.—This clutch is intended to be used in connecting or disconnecting power with or from machinery. It is especially adapted to use in power and other presses employed for punching or swaging purposes, from the fact that the clutch when brought into connection with the pulley performs but one revolution before it is auto matically disconnected, and does not engage again with the pulley until made to do so by the operator.

Claim.—First, the combination of the clutch E and bar G, when constructed and arranged with the tongue *c*, or its equivalent, to operate in the manner and for the purpose specified.

Second, the combination and arrangement described of the clutch E, inclined groove *d*, and tongue *c*, substantially as and for the purpose specified.

No. 48,770.—G. B. HILL, assignor to E. S. ARCHER, New York, N. Y.—*Rotary Air Pump.*—July 11, 1865.—A rotary pump consisting of an outer cylinder, and an inner cylinder with arms attached to its inner periphery and terminating near the central shaft, and curved in such a manner that from the time the air enters a slit in the inner cylinder, immediately in advance of the arm, till the air is all passed out by the descent of that end of the arm in the water, the other end of said arm being always under water. The air is thus forced into a chamber at one end of the inner cylinder, which ascends to descend a tube to the line of the central shaft, whence it flows out through a hollow prolongation of the journal.

Claim.—The combination in a rotary air or gas pump of the buckets M, curved as described, so as to gather in the air or gas, with the space or chamber O, substantially as described, and to the effect set forth.

No. 48,771.—G. MARTIN, assignor to himself and WATSON SANFORD, THOMAS M. DAVIS, and L. H. WALTON, Philadelphia, Penn.—*Paddle Wheel.*—July 11, 1865.—This invention consists of a smooth-faced friction roller or slide, on a journal projecting longitudinally from the upper inner edge or corner of the paddle, and of an irregularly curved smooth-faced bearing, suspended from the shaft of the wheel, and fixed rigidly to the side of the vessel.

Claim.—The smooth-faced friction slide or roller *d'*, on each of the floats or paddles D D, and the smooth-faced, irregularly curved bearing E, on the vessel, the said parts being constructed and arranged to operate together, substantially as and for the purpose described.

No. 48,772.—PATRICK MIHAN, assignor to O. P. DRAKE, Boston, Mass.—*Apparatus for Carburetting Air.*—July 11, 1865.—This invention consists in forming the back of the bucket so that it will make an angle more or less acute with the educt of the bucket, and in making the educts triangular in shape and overlapping each other.

Claim.—In the above described air-forcing apparatus the construction of each bucket educt with the pointed triangle or tapering form, substantially as and so as to operate as described.

Also, the arrangement of the back of each bucket, relatively to the shell of the drum and the educt of the said bucket, the said back in such case springing from the base of the educt and being arranged at an acute angle, or substantially so, with such educt, the whole being as and for the purpose specified.

Also, the arrangement of the several bucket educts, viz., so that one may lap or extend by that or those next contiguous to it, substantially as and for the production of results as specified.

No. 48,773.—J. B. CLARKE, assignor to S. H. BURTON & CO., Cincinnati, Ohio.—*Grates for Cooking Stoves.*—July 11, 1865.—A stationary horizontal grate is so arranged in reference to a vertical folding grate, that the fireplace is convertible into either wood or coal burning. This may be done by dropping the folding grate on top of the stationary grate, and thus closing the apertures between the bars, or by keeping said folding grate in a perpendicular position.

Claim.—First, in the described combination, the stationary grated bottom A B C C', and the folding grate E D D', or their equivalents, for a convertible wood and coal fireplace, as set forth.

Second, the stationary grates B and F, and the hinged and folding grate E, combined and operating as set forth.

Third, the parts A B, C C', D D', E F and G, or their equivalents, arranged and combined to form a convertible wood and coal fireplace, as herein described.

No. 48,774.—DAVID L. PETTEGREW, assignor to SYLVESTER DAVIS and JACOB SMITH, Claremont, N. H.—*Fence.*—July 11, 1865.—In this invention there are two posts which are keyed together near the top by a link and key. Between the posts is inserted an adjustable brace, so that the sill which supports the posts can be placed at any desirable angle to suit uneven ground.

Claim.—The double posts B, with the key D, and the adjustable brace C, combined and arranged substantially as and for the purposes specified.

No. 48,775.—LEWIS C. RODIER, assignor to SAMUEL NORRIS, Springfield, Mass.—*Revolving Fire-arm.*—July 11, 1865.—The nature and object of this invention are explained by the claim.

Claim.—First, the arrangement of a repeating fire-arm, having a many-chambered cylinder hung upon a central axis, in such manner that the said cylinder shall revolve or oscillate between two given points, *i. e.*, between the first and last chamber, substantially as set forth.

Second, combining with an open frame, provided with a projecting stud, a cylinder movable upon its axis and grooved between two points of its circumference, so as to allow of its revolution or oscillation, as herein set forth.

Third, providing the skeleton frame plate or retractor on the end of the sliding pin, when located in the rear of the cylinder, with ratchet teeth, in combination with a pawl actuated by the lock to operate the sliding pin together with the cylinder, as herein described.

Fourth, holding the cylinder and sliding pin within the open frame of the arm by means of a hollow axle upon one end of the cylinder, in combination with a central socket at the other end thereof, and wrought into the skeleton frame of the sliding pin, together with a short movable pin fitting into the said socket, substantially as herein set forth.

Fifth, the combination with a cylinder held in the frame, as set forth, of a spring lever bearing the movable cylinder holding pin, under such an arrangement that the same may be operated from without, for the purpose of releasing the cylinder and enabling it to be disconnected from the hilt or stock of the arm.

Sixth, combining with a cylinder held in its frame, as hereinbefore described, the method of mounting the frame, carrying the barrel and cylinder upon an axle, so as to allow of the disconnecting of the cylinder and barrel from the lock and stock by shifting the same sideways, as herein described.

No. 48,776.—Jas. Sangster, assignor to Harvey Ball and Wm. H. Bonnell, Buffalo, N. Y.—*Lubricating Cups.*—July 11, 1865.—A conical cup with a prolonged spout has a thin metal bottom, inside of which a bar or brace limits the springing action of the bottom, by means of which action the oil is ejected in jets.

Claim.—The brace B, when constructed to operate as herein substantially set forth and described.

No. 48,777.—Wm. Mont. Storm, assignor to himself and R. C. Mitchell, New York, N. Y.—*Steam Engines.*—July 11, 1865.—This invention consists in providing two single-acting pistons in one cylinder, with a sufficient space between them for a slotted cross-head, which embraces and operates the crank, which is of the double or two-throw kind, the other wrist of which is embraced and operated by another cross-head similar to the first, but which is operated by the piston rod of an engine placed vertically and centrally upon the horizontal one, so that the power of both is transmitted to the same shaft. The valves are placed in a chest located on the axial lines of the horizontal cylinder and control the induction and eduction of the steam for both cylinders. The steam is exhausted into the space between the two pistons in the horizontal cylinder, with a view to lubricate the machinery contained therein.

Claim.—First, an engine constructed as follows, to wit: Of a cylinder containing two single-acting pistons, rigidly connected by open "cross-heads," substantially as described, to the crank, both the latter (crank and cross-head) being located in the body of such cylinder and between its pistons, the whole being proportioned and arranged to this end, as set forth.

Second, in combination with the above, the superposed cylinder or engine B, to act upon a crank parallel to the first and on the same shaft also, through the mediation of a "cross-head" located in the same chamber, between the pistons of the horizontal cylinder, substantially in the manner and for the purposes described.

Third, the arrangement whereby the stroke of the piston of such superposed engine is made considerably less than those of the horizontal one, so that the length of its "cross-head," as will be understood, may not render necessary an undue separation of the horizontal pistons, thus occupying unnecessary space, while the combined action of the whole device obviates a dead point, &c.

Fourth, making the pistons of the horizontal cylinder with an overhang, for the purpose described.

Fifth, the pin *d* projecting longitudinally with, but eccentric to the shaft, and rotating with it, to operate the valve by fitting slots X X′ in their tails, at right angles to the lines of their motion, all as explained.

Sixth, the combination of the parts *e f h i′ j l*, constituting the reversing gear, as described.

No. 48,778.—S. H. Wheeler, assignor to Richard Hedden, James T. Stillwell, C. T. Lee, Thos. J. Martin, A. G. Townsend, James Sullivan, Daniel Henderson, and S. H. Wheeler, Dowagiac, Mich.—*Measuring Faucet.*—July 11, 1865.—A piston is driven into the vessel beyond a circle of perforations in the tube. By the withdrawal of this piston a definite quantity of liquid is drawn. But previous to this withdrawal the eduction port is opened by unscrewing the contracted cylinder head and thus releasing a spiral spring which passes a valve to its seat immediately within the eduction port. The liquid is thus permitted to flow as the piston is withdrawn, and in any desirable volume, determinable by the degree of relaxation allowed to the spring above-named.

Claim.—First, the adjustable cap *g* and thimble *f* in combination with the valve *d* for tightly closing the discharge orifice *a* of the faucet tube, substantially as described.

Second, the valve chamber *b* provided with a valve *d* which is acted upon by a spring *e*, in combination with a reciprocating valve-piston D and the tube A, substantially as described.

Third, the combination of tube A, piston D, valve chamber *b* and nozzle C, constructed and operating substantially as described.

No. 48,779.—OSCAR HASE, Mecklenburg Schwerin, Germany.—*Machine for Skinning Vegetables.*—July 11, 1865.—This invention consists in combining a stationary vertical grating cylinder with a central rotating shaft, having a roughened horizontal disk at its lower end operated by gearing and a shaft.

Claim.—The combination in a vegetable or fruit skinner of a stationary cylinder, having an internal roughened surface with a rotating roughened disk to impart centrifugal motion to the commodities to be skinned, substantially in the manner described.

No. 48,780.—EDWARD WADHAMS, assignor to EDWARD ROBERT KENT, Hamilton, Canada West.—*Transmitting Motion.*—July 11, 1865.—The object of this invention is to transmit motion from an oscillating shaft to another revolving shaft, or, in other words, to convert the oscillating motion of one shaft into a continuous revolving motion of another shaft.

Claim.—The double segmental rack A on the rock shaft C, in combination with pinions *b b'*, ratchet wheels *d d'*, and pawls *e e'*, said ratchet wheels being keyed to the shaft D, substantially as and for the purpose set forth.

No. 48,781.—JASON A. ALLEN and ALANSON ALLEN, Oakham, Mass.—*Water Wheel.*—July 18, 1865.—This invention consists of a turbine wheel, the shaft of which is encircled by a collar made adjustable by means of a set screw, the office of which is to sustain the wheel at any desired altitude. On the lower side of the wheel is a grooved flange which straddles a flange ascending from the outer casing. The outer leg of this grooved flange thus revolves in the water confined in the outer casing by which the wheel is partially buoyed.

Claim.—First, providing the lower side of the wheel case with a flanged rim K, for the purpose of causing the water to press on the lower side of the wheel, substantially as and for the purposes stated.

Second, in combination with the detachable flanged rim K applied to the lower side of the wheel case, the grooved flange *g* on the lower side of the wheel, substantially in the manner and for the purposes described.

Third, the application of turbine shafts and to the lower face of the turbine wheel of the adjustable supporting collar I, substantially as and for the purpose described.

No. 48,782.—STEPHEN M. ALLEN, Woburn, Mass.—*Method of Treating Hemp, Flax, Jute, Grass, &c.*—July 18, 1865.—This invention in steeping and rotting the material, after which it is allowed to dry, when the gummy matter crystallizes and is removed by scraping and flossing, in connection with stranding and drawing it down to or like cotton or wool. It is then ready for spinning.

Claim.—First, a fibre composed of flax, hemp, jute, china grass, and other long line substances dew or water rotted, steeped or fermented and submitted to a stranding and flossing process by drawing rollers, scutchers, scrapers, bar beaters, pickers, cards, or any suitable machinery for the purposes of reduction, in the manner and for the purpose set forth.

Second, a yarn, cloth, felt, or paper stock made from long fibre such as flax, hemp, or other like substances which has been line submitted to dew or water rot, steeping or fermentation, in combination with stranding and flossing by mechanical means, substantially as herein set forth.

Third, a yarn, cloth, felt, or paper from long line fibre treated as above and when mixed with any other fibre, substantially as set forth.

No. 48,783.—PARKER H. ALLSTOTT, Jeffersonville, Ind.—*Cultivator.*—July 18, 1865.—This invention consists in the arrangement of the connecting bars, bolts, screws, and slots, for changing the angle between the shares and beams.

Claim.—The relative arrangement of the shares and beam and the construction and arrangement of the connecting rods, bars, bolts, and screws and taps, so far as they assist in effecting the purpose and object of changing at will the angle between the shares and beams and thereby altering the draught of the tiller.

No. 48,784.—A. D. ANSELL, Hartford, Conn.—*Belt Clasp.*—July 18, 1865.—This invention consists in securing the ends of a belt between clamping surfaces by means of inclined planes without using screws.

Claim.—The employment of the inclined planes *b*, in combination with the plate *a* and jaws *c*, substantially as and for the purpose described.

No. 48,785.—WILLIAM BICKEL, Pottsville, Penn.—*Drill for Boring Rocks, &c.*—July 18, 1865.—This invention consists of a chisel-formed drill, with pick-formed wings welded or otherwise fastened to the bit stock, said pick points extending below the point of the chisel.

Claim.—The combination of pick and chisel described, the points constituting the former extending longitudinally beyond the latter, for the purpose set forth.

No. 48,786.—CALEB C. BISHOP, Poughkeepsie, N. Y.—*Churn.*—July 18, 1865.—In this invention the shaft is upright, and the lower end is provided with a hub that works loosely on a collar. This hub is provided with adjustable paddles, which are held in the desired positions by set screws.

Claim.—The adjustable screw blades E, bearings *e*, arranged relatively to the hub D, and handle C, of a reciprocating churn dasher, substantially in the manner and for the purposes herein set forth.

No. 48,787.—JOHN W. BOUGHTON, Appleton, Wis.—*Car Coupling.*—July 18, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—First, the latch, pivoted and held in place as shown, and for the purposes set forth.

Second, the movable tumbler, working in combination with the latch and pin in the rear, in the several combinations as shown and described, and for the purposes set forth.

Third, the spring box or rod I, located above the tumbler, for the purpose set forth.

No. 48,788.—DANIEL BOWKER, Boston, Mass.—*Carpet Slipper.*—July 18, 1865.—This invention consists in rendering the sole water-proof, and in strengthening the seam and uniting the quarter with the upper by means of a metallic rivet or fastening.

Claim.—As a new article of manufacture, a carpet slipper, provided with a water-proof inner sole, and having the quarter united to the upper by means of a rivet or rivets in connection with the ordinary stitching, as herein described.

No. 48,789.—CHARLES BULLOCK, Cambridge, Mass.—*Inhaling Tube.*—July 18, 1865.—This invention consists in the attachment to the inhaling tube of an inhaling instrument or an auxiliary mouthpiece, so arranged as to slide over the tube.

Claim.—Combining with an inhaling tube an auxiliary mouth-tube, in the manner and for the purpose substantially as set forth.

No. 48,790.—JEROME CALKINS, Hudson, Mich.—*Harness.*—July 18, 1865.—The object of this invention is to enable horses to hold back without employing the ordinary breeching harness. Straps are so arranged as to throw the pressure upon the horse's rump, like the hip harness, with the addition of two straps, which loop in the rings at one end and pass forward and attach at the other end to the martingale under the belly.

Claim.—Arranging and connecting the straps D D with the rings E E, strips C C, ring *a*, and with the ring F, substantially as and for the purpose specified.

Fo. 48,791.—JUSTUS CHOLLAR and CHARLES W. CUNNINGHAM, Washington, D. C.—*Cooler for Beer and Other Liquids.*—July 18, 1865.—This invention consists of an annular vessel formed of galvanized iron or other suitable material, and of such size as to fit into a bucket. The said vessel is provided with a flexible tube which is connected with the beer vessel, and a tube and stop-cock, the latter tube being perforated at its lower end in order to filter the beer.

Claim.—The above-described cooler B, provided with the ice space C and discharge tube F, in combination with the outer vessel A, when arranged and operated substantially as set forth.

No. 48,792.—JOHN CONDELL, Morristown, N. Y.—*Artificial Leg.*—July 18, 1865.—This artificial limb is intended for amputations below the knee, and is supported by straps secured to the sides of the socket, and an elastic band secured to the front of the socket, the said straps and band uniting in a stronger elastic strap which passes upward, and is suspended from a yoke strap over the shoulder. The foot piece has a socketed axial bolt passing transversely through its rear portion, which, being secured to a bar projecting up into the leg, forms the ankle joint.

Claim.—First, the supporting appendage, consisting of the straps K K and elastic straps N L, substantially as and for the purpose described.

Second, the central bar *a a b* in combination with a socketed axial bolt or bolts *c*, substantially as described.

No. 48,793.—DANIEL G. COPPIN, Cincinnati, Ohio.—*Shaft for Boring Tools.*—July 18, 1865.—This coupling is of solid metal, one section having a slot across its end extending back in the direction of the length of the rod about one and a half inch, and at the bottom of this slot, coincident with the axis of the section or rod, is a cylindrical hole having a depth of about three quarters of an inch. The other section is provided with a tenon, and

projecting from the end of the latter a dowel pin, which respectively correspond with the slot and cylindrical hole. A screw-tapped bolt passes transversely through the two sections to hold them together.

Claim.—The improved coupling for the sections of a well-boring rod, consisting of the collars C and F, the tongue D, jaws E and E′, dowel G, socket H, and the countersunk screw key I, or their equivalents, combined and operating as set forth.

No. 48,794.—C. O. CROSBY, New Haven, Conn.—*Cover for the Exhibition of Samples.*—July 18, 1865.—This invention consists in forming a depression in the cover to place a sample therein, so that the boxes may be placed one upon another without interfering with the sample.

Claim.—Making a depression in the cover of boxes for the purpose described, when the said depression is formed from the same material as the cover, substantially as and in the manner described.

No. 48,795.—JOHN P. CURRY, New York, N. Y.—*Construction of Vessels.*—July 18, 1865.—In this invention the vessel is formed of tubular iron. The improvement consists in the means of fastening the wood to the iron. This is accomplished without punching the iron by the use of clasps and straps. This mode of fastening gives "room or play" for the contraction and expansion of the tubular iron frame caused by atmospheric changes.

Claim.—A combined tubular iron and wood frame for vessels so united as to conjointly receive, resist, or transmit the strain throughout the whole, while the tubular iron frame is free to expand or contract by atmospheric changes without injury to itself or to the fastenings of the wooden frame, as herein described and represented.

No. 48,796.—JAMES DOWNIE, Paterson, N. J.—*Machine for Preparing Woof for the Manufacture of Hair and Grass Cloth.*—July 18, 1865.—By this machine the short lengths of hair or grass are fed upon endless aprons in such a manner that their smaller ends shall slightly overlap their larger ones, and that they shall be parallel with and surround a central guiding thread or core, and the whole is then spirally and slightly wound with a binding thread by means of flyers. The product thus formed is used as weft, and in weaving gives a selvage, instead of having the ends of the hair, as usual, project at both edges of the woven fabric.

Claim.—The combination of the hollow shaft or spindle *s* with the flyers *x* and the feeding apron W, the whole operating substantially as described and for the purpose stated.

No. 48,797.—WILLIAM DUTEMPLE, Malden, Mass.—*Pipe Coupling.*—July 18, 1865.—In this coupling the two sections are held together by screw threads in the usual manner; the principal peculiarity consisting in forming the socket of the female section with an outer and inner wall, the male section being screwed up in contact with the former, and an oval space intervening between the male section and inner wall, which is filled with cement.

Claim.—The recess *i* and lip or ring *k*, for reception of the male end of the coupling, and the cement by which the parts are packed.

Also, giving to the lip or flange *h* an inclination, in the manner and for the purpose substantially as set forth.

No. 48,798.—LUCIUS H. DWELLY, Dorchester, Mass.—*Horseshoe Nail.*—July 18, 1865.—This invention consists in a combination and arrangement of several devices for making horseshoe nails, too complicated to be described in brief.

Claim.—The former F, having a progressive motion, substantially as set forth.

Also, the vibrating cutters *a′ b′*, operating substantially as described.

Also, causing one of the cutters, by the act of carrying the rod forward to the other cutter, or by any other moving part of the machine brought up against the bent portion of the rod, to feed in a sufficient length of rod for the next succeeding nail.

Also, feeding in the rod previous to the nail already formed on its end being cut off.

Also, gauging or determining the length of rod fed into the machine by means of the cutter *b′*, substantially as described.

Also, making the cutter *b′* adjustable, so as to allow more or less of the rod to be drawn forward previous to cutting off, substantially as described.

Also, equalizing the throw of the hammers G, by means of the belts *q*, arm *s*, and spring *u*, so as to cause them to strike at the same instant upon the nail, substantially as set forth.

Also, the revolving arm or segment E, carrying a succession of rolls placed at unequal distances from the centre around which they are carried, in combination with a movable former, substantially as described.

Also, the revolving arm or segment E, carrying a succession of rolls placed at unequal distances from the centre around which they are carried, in combination with the hammers G and a movable former, substantially as described.

Also, attaching the springs *o* which operate the hammers G to movable carriages, as set forth, for the purpose specified.

No. 48,799.—E. A. EDDY, Racine, Wis.—*Stake-holder for Platform Car.*—July 18, 1865.—This invention consists in a novel mode of attaching and securing the stake to the side of a platform car, whereby, while said stake is immovably attached to the car, and therefore cannot be lost, it may by a novel arrangement be firmly and rigidly fixed in an upright position, and may also be adjusted or turned down in a horizontal position when required.

Claim.—In combination with the stake B and holder C, the employment of the latch A, arranged and operating substantially as herein shown and described.

No. 48,800.—E. A. EDDY, Racine, Wis.—*Stake-holder for Platform Car.*—July 18, 1865.—This invention consists in so constructing the casting or socket into which the lower end of the stake is placed and in so attaching the stake thereto that, while it cannot be thrown out, it remains firmly in a vertical position when required, and by a simple and easy adjustment it may be turned down in a horizontal position, either to the right or left, as required.

Claim.—First, the casting A A′, constructed substantially as shown and described, and provided with one or two recesses *a*, for the purposes specified.

Second, the combination and arrangement of said stake-holder A A′ with the slotted stake D, centre-bolt C, and projection *b*, operating substantially as and for the purposes set forth and shown.

Third, the combination of the stake D, provided with the projection *b*, with the stake-holder A A′, provided with the recesses *a*, arranged and operating as and for the purposes specified.

Fourth, the combination of the stake D, provided with the slot *d*, and the pin or bolt *c*, arranged and operating substantially as described.

No. 48,801.—JAMES ELLISON, Boston, Mass.—*Boot and Shoe Holder.*—July 18, 1865.—This invention consists in a curved arm reaching from the sole of the foot to the top of the leg, and permanently attached to a fixed article, in combination with a lever, provided with a last-shaped foot, a handle, and ratchet, to operate with a pawl. Both arm and lever, after being inserted into the boot, are expanded so as to hold it firmly.

Claim.—A boot and shoe holder, consisting of the fixed arm A, pivoted lever B, handle K, ratchet C, and pawl D, or their equivalents, constructed, combined, and operating substantially as set forth and for the purpose described.

No. 48,802.—A. A. EVANS, Boston, Mass.—*Shirt Collar.*—July 18, 1865.—This invention is fully set forth in the claim.

Claim.—Rounding and narrowing the lower corners of turn-over or stand-up shirt collars, when constructed with concave bottoms, substantially as set forth and for the purposes described.

No. 48,803.—JOSEPH EVANS, Newark, N. J.—*Pruning Shears.*—July 18, 1865.—This invention consists in operating the shears in a way that dispenses with the knuckle joints, the projecting ends of which are apt to be inconveniet, and in providing a drawing cut in the place of a direct pressure cut.

Claim.—The arrangement and combination of the parts of the shears in the manner and for the purpose specified, when used in combination with the already patented pole or holder, said patent bearing date July 16, 1861.

No. 48,804.—JOSEPH FECKER, Cavetown, Md.—*Saw-mill.*—July 18, 1865.—In the lower end of the pitman is a long mortise, in which are two changeable blocks, in one of which is fitted the wrist pin of the crank; these blocks can be changed in their position, and by this means the saw is caused to wear away uniformly throughout its length, without the necessity of much filing.

Claim.—In combination with a saw pitman, the changeable crank, pin-block and follower, with the keys or wedges, for the purpose of shifting the working part of the saw, and thus causing it to wear away uniformly through its length, and avoid the necessity and loss of so much filing, as herein described and represented.

No. 48,805.—HENRY GERNER, New York, N. Y.—*Steam Boiler.*—July 18, 1865.—This invention consists in arranging the steam dome of a boiler, within its shell and water space, in such a manner that the shell of the boiler may be filled with water, or nearly so, and the fire made to strike the same around its entire circumference. The steam dome is surrounded by water, which, when heated, prevents the radiation of heat from the dome, and the condensation and loss of steam consequent thereupon.

Claim.—The combination and arrangement of the cylindrical steam reservoir B, located within the boiler A, the tube *b*, and the eduction steam pipe *c*, substantially in the manner and for the objects specified.

No. 48,806.—HENRY GERNER, New York, N. Y.—*Hydro-Carbon Blower for Furnace of Steam Boiler, &c.*—July 18, 1865.—This invention consists of a vessel, divided into two

compartments, one of which is provided with a funnel and communicates with a steam generator by means of a pipe. The vapors generated in this compartment pass into the other compartment through a tube, and escape through other tubes into a tube the end of which is bell-shaped, and is situated directly under the grate bars of a furnace.

Claim.—First, superinducing the combustion of fuel by introducing directly thereto a hydro-carbonaceous vapor, when the same is produced by forcing steam into and through a body of petroleum or other hydro-carbon liquid, and when said vapor, together with the atmospheric air, is made to constitute the draught medium, in the manner herein described.

Second, the hydro-carbon chamber E, provided with a steam supply-pipe C, and vapor discharge pipe D, in combination with the chamber F, jets H H, and air-induction pipe L M, constructed and operating substantially as and for the purpose described.

Third, making the air-induction pipe L adjustable, substantially as and for the purpose specified.

No. 48,807.—S. D. GOODALE, Cincinnati, Ohio.—*Stereoscope.*—July 18, 1865.—In this stereoscope the pictures are previously brought within the range of vision by the rotation of an endless carrier. The carrier is provided with a series of two-faced, wedge-formed picture holders, by means of which the scenes are caused to come into view at a more convenient angle for inspection than is the case with those having the customary vertical presentation, and render possible the use of eye tubes inclined slightly downward toward the scenes, by means of which a lower and more compact case than usual may be made use of.

Claim.—First, a continuous scene carrier, having the series of two-faced, wedge-formed holders N, strung upon elastic ribands M M′, substantially as set forth.

Second, a continuous scene-carrier, having the series of two-faced, wedged-formed blades N, when combined with the pair of depressed lens-holders or eye-tubes O O′, substantially as set forth.

Third, the scene holder N P, formed and operating as described.

Fourth, the combination of the bent elastic pintle *d* with the reflector B, as and for the purposes set forth.

No. 48,808.—JOHN GRIEVES.—Brooklyn, N. Y.—*Portable Derrick.*—July 18, 1865.—This is a portable derrick for operating the tools used in drilling artesian wells, and consists of a somewhat complicated arrangement of mechanism, not easily explicable in a small compass. The main features of the machine, however, are a perpendicularly sliding frame, to which a reciprocating motion is imparted. The drill rope, passing over a pulley in the top of this frame, partakes of this motion and communicates it to the drill, which thus has a percussive action upon the strata through which it passes.

Claim.—The sliding frame D D, lifting wheel R, arbor H, large wheel H2, in combination with the arbor M, pinion M2, spool O, lever S, ratchet Q, and pawl Q2, in the manner and for the purpose set forth.

No. 48,809.—JOHN GRIEVES, Brooklyn, N. Y.—*Well Borer.*—July 18, 1865.—This invention consists of a cup applied to the drill rope, just above the drill bar, for the purpose of receiving any detritus or other matter that may fall into the bore, and might otherwise obstruct the action of the drill. The drill bar is also a sand pump, and is provided with a removable cap at its top for the discharge of its load.

Claim.—First, the cone-shaped cap P, with the collar R, for the purpose set forth.

Second, the safety cup U, as specified.

No. 48,810.—CHARLES H. GUSTIN, Worcester, Mass.—*Car Brake.*—July 18, 1865.—This invention consists in the employment of laterally-adjustable friction clamps upon the axis of car truck wheels, and sustained by the truck frame independently of the means employed for actuating them, thereby transferring all the strain upon the friction clamps (consequent upon breaking up the train) directly to the truck frame, and thereby enabling light rods to be employed for connecting together and acting upon the clamps.

Claim.—First, the employment of laterally-adjustable friction clamps E E′, which are suspended from the truck frame, in combination with intermediate friction plates D, which are secured to the axles of the car wheels, substantially as described.

Second, the construction of the friction clamps with wings on them, substantially as described.

Third, suspending the friction clamps by means of hangers *d d′*, staple guides *f f*, and pins *g g*, substantially as described.

Fourth, the removable friction plates S S, applied to the laterally-adjustable clamps, substantially as described.

Fifth, the connecting rods G G′, applied to the hubs of the friction clamps, in combination with the loose pulley *j*, chain *k*, and lever H, arranged substantially as described.

Sixth, so applying the laterally-adjustable friction clamps that the strain which is received by them will be sustained by the truck frame instead of by the connecting rods G G, which are used to adjust said clamps, substantially as described.

No. 48,811.—L. B. HARTT, Detroit, Mich.—*Washboard.*—July 18, 1865.—This invention consists in adapting the two sides of the board to different kinds of work, by making the corrugations on one side coarse, and on the other fine. Longitudinal grooves are also let into the corrugated surfaces, forming channels with flattened bottoms in which the clothes are manipulated.

Claim.—The washboard, constructed with longitudinal grooves on its corrugated surface, forming channels with flattened bottoms, in which the clothes are manipulated.

No. 48,812.—HENRY H. HEMPLER, Washington, D. C.—*Pocket Sun Dial.*—July 18, 1865.—This invention consists of two small plates of brass hinged together and marked on one side with the divisions of a dial. Attached to the said plates is an index in such a manner, that when the plates are unfolded, it assumes a vertical position; on one of these plates is a small compass by which the proper position of the dial is ascertained. The instrument when not in use can be carried in the vest pocket.

Claim.—A portable sun dial, with hinged or folding plates, and central index, in combination substantially in the manner herein described.

No. 48,813.—SAMUEL F. HODGE, Detroit, Mich.—*Rock Crusher.*—July 18, 1865.—This rock crusher has a vibrating motion, and is partly surrounded by an adjustable bed pivoted at its upper end, and made to yield by the lower end resting on a lever, on the opposite end of which is a weight, so that any hard substance that could not be crushed will not injure the machine, for the reason that the bed would raise the loaded lever and thus relieve itself.

Claim.—First, the lever and adjustable bed, in combination with the crusher, substantially as and for the purposes set forth.

Second, a stone or rock-breaking machine, with a yielding jaw B, in combination with a loaded lever, substantially as described.

No. 48,814.—JOHN A. HOTCHKISS and RICHARD EAVES, Derby, Conn.—*Dish-washer* —July 18, 1865.—This invention consists of two disks placed one above another at a suitable distance apart, each provided with alternating bristles and sponges. Rotary motion is communicated to these disks in opposite directions, and the dishes inserted between them are consequently cleaned. These disks are placed in a tub which is partially filled with water, and are set upon a spiral spring in such a manner that whenever it is desired they may be plunged with the dishes below the surface of the water and thrust out thence again by the spring upon the removal of pressure.

Claim.—First, the arrangement of the alternating bristles and sponges *d d''* with the disk D of a dish-washing machine, in the manner and for the purposes substantially as herein set forth.

Second, the spring C arranged relatively to the wheels B D, and suitable means for depressing D, substantially as and for the purpose described.

No. 48,815.—HENRY HUTCHISON, Three Rivers, Mich.—*Churn.*—July 18, 1865.—In this machine there is a four-armed crank, and four dashers are arranged quadrilaterally, so that by the revolution of the crank the dashers will approach and recede from each other.

Claim.—First, the combination in a churn of the four-armed crank A, with four sectional dashers arranged quadrilaterally, substantially as and for the purpose specified.

Second, the combination with the four-armed crank, the pitmen rods and dashers, or the stationary guide E arranged within the churn, substantially as described for the purpose set forth.

No. 48,816.—JAMES IVES, Mount Carmel, Conn.—*Lamp.*—July 18, 1865.—This invention consists in certain devices constituting a combined hinged shade and chimney base, with a hinged guide and stop.

Claim.—First, a combined hinged shade and chimney base for lamps, substantially as herein described.

Second, the construction of the hinge with a guide and stop, substantially in the manner and for the purpose described.

Third, the combination of a combined shade and chimney base, a lamp or burner cap, and a hinge joint, all constructed and operating substantially as described.

Fourth, the combination of the set screw seat ring of a lamp fountain, and the bowl or lamp fountain, substantially as and for the purposes set forth.

No. 48,817.—C. M. JENNE, Young America, Ill.—*Cultivator.*—July 18, 1865.—The axle is applied to the draught pole in such a manner as to admit of a forward and backward play of the former, for the purpose of preventing the implement from straining or breaking in case the ploughs meet with obstructions. Two stay rods project one from each side of the draught pole and pass through the axle. These rods are provided with spiral springs between their rear ends and the back side of the axle, so as to admit of a forward and backward play of the axle at either side of the draught pole. The plough beams are connected with the axle in such a manner that a universal joint attachment is obtained and the ploughs may be raised, lowered, or moved laterally as required.

Claim.—First, the axle A arranged or applied to the draught pole C, substantially as shown, to admit of a forward and backward play thereon, for the purpose set forth.

Second, in combination with the above, the rods D D attached to the draught pole C, and passing through the axle A, with springs *a* on their rear ends, to operate substantially as and for the purpose herein set forth.

Third, the stirrup H applied to the draught pole C, in combination with the bars I I, rods *f*, links *g*, and axle A, all arranged substantially as and for the purpose specified.

Fourth, the rods M M attached to the plough beams J J and connected by links N N with the adjustable plates O O on the draught pole C, substantially as and for the purpose set forth.

Fifth, the bar E connected by a hinge or joint *b*, with the rear of the draught pole C, in combination with the rod F and adjustable plate G, for the purpose specified.

No. 48,818.—CHARLES A. KIRKPATRICK, Somerville, Mass.—*Roofing Bracket.*—July 18, 1865.—This invention consists in part of a bracket to be used upon a staging of ordinary construction at the side of a building. It is composed of two foundation pieces at right angles to each other, from the point of intersection of which projects upward a post suitably braced. This bracket is provided with a screw bolt and nut, so connecting the upright post and the two cross pieces that when loosened they may be easily taken apart, and when it is tightened they are firmly bound together. The invention also consists of a roof bracket to be used when required, and to be supported by its lower end against the side bracket on the staging.

Claim.—A bracket or machine constructed substantially as above described, and for the purpose set forth.

No. 48,819.—LOOMIS G. MARSHALL, Mokena, Ill.—*Drill.*—July 18, 1865.—This invention consists of a divided drill so formed that when the drill strikes the bottom of the well, or any obstruction placed in the bore at any desired point, the drill will be forced open and the divisions thrust outward. The outer edges are formed as cutting edges, so as to cut the rock outward and upward. When the drill is raised the divisions close of themselves, and the operation is continued until the desired effect is produced.

Claim.—The construction and combination of the pivoted drills, having front and back cutting edges and flat inclined bottoms for chamfering and cutting outward and upward, as herein described.

No. 48,820.—EDWIN MARTIN, Springfield, Mass.—*Priming Metallic Cartridges.*—July 18, 1865.—Within the base of a metallic cartridge case a perforated or annular disk is placed for supporting within it a glass percussion cap, which is discharged by a blow delivered centrally upon the base of the cartridge.

Claim.—Enclosing the fulminate of mercury or other substance to ignite the powder in a cartridge box by its explosion in glass or other vitreous substance, substantially in the manner and for the purpose described.

No. 48,821.—ORVILLE MATHER, Newport, Ky.—*Children's Carriage.*—July 18, 1865.—This invention consists in suspending the body of the carriage from a pair of C springs formed of a single strip of ash, hickory, or other tough and elastic wood.

Claim.—First, the mode of supporting the body of children's carriages from points of suspension above the centres of gravity of the same when loaded, substantially as set forth.

Second, in combination with the above mode of hanging the body of children's carriages, the check brace D D, or its equivalent, substantially as and for the object stated.

No. 48,822.—JOHN MATTHEWS, Jr., New York, N. Y.—*Method of Closing Bottles.*—July 18, 1865.—This invention consists of a bottle with a cork inside, the said cork having a rod of iron passing through it. The cork is drawn into the neck of the bottle by means of a magnet.

Claim.—First, constructing a bottle-stopper with a core of metal, either magnetic or capable of being attracted by a magnet, as and for the purpose specified.

Second, the employment of a magnetic plunger M M, or its equivalent, substantially as and for the purpose specified.

Third, the bottle B, stopper F, and plunger M, when operating by magnetic attraction, as described, for the purpose specified.

No. 48,823.—JOHN M. MAY, Janesville, Wis.—*Rock Drill.*—July 18, 1865.—This invention consists in the construction and arrangement of the several members of a drill, in order to form a strong, compact, and efficient tool for drilling and reaming an artesian well at one and the same operation.

Claim.—First, apertures or mortises *c* and *d* in thimble A, or their equivalents, to receive tenons *a* and *v*, or their equivalent, extending from members C and D, when used to connect thimble A and members C and drill, substantially as and for the purposes described.

Second, aperture or mortise *e* in member B, to receive tenons *g* and *f*, or their equivalent,

extending from members C and D of a drill, when used to connect members B, C, and D of a drill, substantially as and for the purposes described.

Third, an angle and bearing at *m* and at *n* in members C and D, either with or without pieces *o* and *p*, to give suitable outward pressure against the inside of thimble A, to make, when the several parts are put together, a firm, compact-built tool, substantially as described.

Fourth, combining members B, C, and D with thimble A, substantially as and for the purposes described.

Fifth, a general arrangement of members B, C, and D, thimble A and band E, when the whole are constructed and operated substantially as and for the purposes described.

No. 48,824.—RUFUS S. MERRILL, Boston, Mass.—*Lamp Burner.*—July 18, 1865.—This invention consists in attaching to an adjustable tube, sliding on the wick tube, an annular concentric collecting chamber at or near the top of the burner, with a perforated disk. With the above is combined a concentric outer jacket open at its under side to admit of air entering the same.

Claim.—First, the employment of annular concentric collecting chambers at or near the tip of the burner, when the same are made adjustable in relation to the burner, substantially as hereinbefore set forth.

Second, the attachment of the annular collecting chamber or chambers concentrically with the wick tube to an adjustable sliding tube or friction sleeve, whereby the flame of the burner may be regulated without interference with the wick itself.

Third, in combination with the above, the concentric outer jacket, open at the under side so as to allow air entering the same in the manner and for the purpose substantially as set forth.

Fourth, in combination with the above, the perforated disk or flange, for the purpose specified.

Fifth, the method described of attaching the outer jacket to the adjustable slide by indentation, substantially as set forth.

No. 48,825.—WM. T. MERSEREAU, Newark, N. J.—*Stair Rod.*—July 18, 1865.—This invention consists in forming stair rods so that their attachments to the stair are made to have the appearance of part of the rod, and may be ornamented in any suitable manner.

Claim.—First, continuing the metal in the manufacture of the button, so that an ornamental device may be formed upon the same, for the purpose specified.

Second, continuing the metal in the manufacture of the sliding catch so that an ornamental device may be formed upon the same, for the purpose specified.

Third, combining with the button and sliding catch, whether the same be ornamented substantially as shown, or not ornamented, the stair rod H, for the purposes specified.

No. 48,826.—GEORGE E. MILLS, New York, N. Y.—*Pump.*—July 18, 1865.—In this invention the pump rod is guided by a cross-head moving between two guide rods, which guide rods are attached to the head of the pump cylinder and stuffing box, so that they may be turned to admit of the operation of a crank at any side of the pump.

Claim.—The mode of attaching guide rods *m m* to the head of the pump cylinder and stuffing box *k*, so that they will turn to allow the cross-head I to be worked by a crank in any position, as set forth.

No. 48,827.—S. A. MOORE, Bloomfield, Iowa.—*Horseshoe.*—July 18, 1865.—This invention consists in making first a plain shoe, without calks, that is nailed to the foot, then two plates having each a toe and heel calk, and which represent nearly half of a shoe, and secured to the shoe by means of a tenon upon each of their ends, which enter corresponding mortises in the under side of the shoe; and in the middle of each plate is a hole, admitting a screw which screws into the shoe, the head of which screw also forms an intermediate calk.

Claim.—First, the auxiliary calked plates A A, constructed with inclined locking tenons *g g*, and offsets *e e*, substantially as described.

Second, the construction of calk plates A A, with toe and heel calks and locking tenons *g g*, in combination with the calked head screw fastenings *d d*, substantially as described.

Third, securing plates having calks formed on them to horseshoes by means of inclined tenons *g g'*, and intermediate screw fastenings *d d*, substantially as described.

No. 48,828.—EVAN MORRIS, Philadelphia, Mass.—*Hat.*—July 18, 1865.—This invention is fully described by the claim.

Claim.—A hat having a body or foundation of felt and cover of woven fabric, with gutta-percha interposed between the two, the whole being united by the application of heat and pressure, substantially as set forth.

No. 48,829.—GEORGE G. MUDGE, Pittsburg, Ind.—*Carpet Stretcher.*—July 18, 1865.—This device consists of parts made extensible, so that it may reach from wall to wall of different sized rooms, and with an armed rocking lever for forcing the carpet to the place desired.

Claim.—The frame, consisting of extensible hinged sections, and provided at one end with an armed rocking lever, by which the edge of the carpet is drawn to the position required.

No. 48,830.—LAWRENCE MYERS, Philadelphia, Penn.—*Freight Car.*—July 18, 1865.—This invention consists of a cylinder, divided into compartments, attached to the axle of railroad cars for the purpose of carrying freight, and is surrounded by an elastic covering that will yield when the wheels come in contact with slight obstructions, thus preventing the jar from the inner cylinder, and the displacement of freight therein.

Claim.—The casing *d*, in combination with the tires D, and the intervening slats or cylindrical casing, or their equivalents, for the purpose specified.

No. 48,831.—GABRIEL NATCHER, Sidney, Ohio.—*Millstone Dress.*—July 18, 1865.—This invention is explained by the claim and engraving.

Claim.—First, a double inclined plane on that side of the furrow on which the grain rises.

Second, marking with lines, substantially as described, the first inclined plane, extending from the base line of the furrow to the first step.

Third, marking with lines of the angle described, or thereabout, the outer portion of the face of the stone, as described.

No. 48,832.—EDMUND S. NICHOLS, assignor to himself and FRANCIS M. NICHOLS, Joliet, Ill.—*Marble Polishing Machine.*—July 18, 1865.—This invention consists in a polishing bed, having a reciprocal movement, in a device for supplying sand, and another whereby the water which has been once used can be returned to the reservoir, whence it is conveyed to the machine, and finally into a revolving bucket.

Claim.—First, the employment of a reciprocating inclined polishing bed K, arranged and operating substantially as and for the purposes specified and shown.

Second, in combination with said reciprocating polishing bed, the employment of the anti-friction rollers R, and adjustable bearings S, arranged as and for the purposes described.

Third, in combination with the sand-box C, the hinged bottom D, spring *b*, and slides *a*, all arranged and operating substantially as shown and set forth.

Fourth, the combination and arrangement of the hinged bottom D, spring *b*, chain *c*, and arm E, as and for the purposes described.

Fifth, providing the inclined table I with the pivoted adjustable leaf M, arranged substantially as and for the purposes specified.

Sixth, the employment of a revolving bucket Q, arranged and operating substantially as and for the purposes shown and described.

Seventh, the combination and arrangement of the reservoir T, the revolving bucket Q, inclined table L, polishing bed K, receiver U, and tube or trough V, operating substantially as and for the purposes described.

No. 48,833.—E. F. OLDS, New Hudson, Mich.—*Houses for Preserving Fruit.*—July 18, 1865.—This invention consists of a house provided with double walls having spaces between them. Inside of the house a safe is placed, the walls of which may be made double or single; the safe may also be provided with chambers for holding ice, the said chambers being provided with doors, so that the fruit can be exposed to the direct action of the light when necessary.

Claim.—First, the safe B, arranged and constructed in the manner set forth, in combination with the ice-house A, as specified.

Second, the side ice chambers *c g*, and doors *c' b g*, separate, and in combination with gauge or perforated slides *p*, as and for the purpose set forth.

Third, one or more central chambers C D, with or without the gauge or perforated slides in connection with the doors *h h*, substantially as and for the purpose set forth.

No. 48,834.—WILLIAM B. PARSONS, Granger, N. Y.—*Rake Attachment to Harvesters.*—July 18, 1865.—This invention consists in locating the rocking or bell-crank lever, which communicates motion from the crank arm to the rake, upon a vibrating plate or block, which is pivoted to the main frame, and which, when it is desired to have the rake operate, is prevented from vibrating by means of a spring latch placed under the control of the attendant. When it is desired to stop the rake, the spring latch is removed, and the plate vibrates without imparting motion to the rake.

Claim.—First, the block S, in combination with the rock shaft L, operated and operating substantially as described.

Second, the latch N, in combination with the block S, substantially as and for the purpose set forth.

No. 48,835.—LOREN G. PECK, Rouseville, Penn.—*Well Drill.*—July 18, 1865.—The object of this invention is to enlarge the diameter of oil and salt wells at their extreme depth, or at any point thereof, either for the purpose of removing obstructions to the free entrance of oil or brine into the well, or in order to loosen and remove any obstruction therein in the nature of a broken tool, &c.

Claim.—First, the hollow stock or socket holder, composed of the parts A A, so constructed as to be united or held firmly together at the top, but expanding sufficiently below to receive the boxes *d d*, in combination with the reaming bits B B, bands *f f*, and adjustable wedge G, the whole arranged and operating substantially in the manner and for the purposes set forth.

Second, the arrangement of the wedge G, in relation to the points of the bits or reamers B B, and stock A, whereby said reamers are enabled to work around and beyond tools or other impediments which accidentally obstruct the well, substantially as shown and described.

Third, constructing the bits or reamers B B with equally inclined faces on their adjacent sides within the stock A, in combination with said stock and the wedge G, so arranged that when said faces by approaching come in contact the motion of the wedge and the expansion of their cutting parts are limited, and the parts are firmly held together, and act as one reamer, substantially as shown.

No. 48,836.—CHARLES PERLEY, New York, N. Y.—*Deck and Side Light for Vessels.*—July 18, 1865.—This invention consists in the use of a conical ring, in combination with which there are screws. The glass is retained in the metallic frame by pins and notches in the edges of the glass, in order to prevent motion of the glass before the hardening of the cement.

Claim.—First, the fixed conical ring *a b*, in combination with the conical deck or side light fitted and acting substantially as specified, and in combination therewith the packing groove 3, for the purposes specified.

Second, in combination with the deck or side light and ring *a*, the screws 3, and groove 4, as set forth.

Third, retaining the glass in the metallic frame by pins passing into notches in the edges of the glass, in combination with a cement surrounding said glass, whereby any movement of the glass previous to the hardening of such cement is effectually prevented, as set forth.

No. 48,837.—ORRIN REEVES, Greenport, N. Y.—*Washing Machine.*—July 18, 1865.—This invention consists of a metal standard in a wash-tub of the common form, around which a rubber revolves with friction rollers; the other parts of the machine are the same as described in the patent of said Reeves, dated February 7, 1865.

Claim.—The standard and friction rollers *g g*, in the rubbing board D, in combination with a tub having ribs on its inner perimeter, and radial flutes or ribs on its bottom, the rubbing board having a scalloped perimeter and radial ribs on its under side, as and for the purposes herein described and represented.

No. 48,838.—ASA T. RING, Newtonville, Mass.—*Tree Protector.*—July 18, 1865.—This invention consists in providing an opening which can be closed, by a sliding door, for the purpose of introducing a fluid into the trough that surrounds the tree.

Claim.—The openings *f f*, and slides *g g*, in combination with the cases *b b*, the caps *c c*, the semi-tubes *d d*, and the two troughs *a a*, the whole being arranged substantially as described.

No. 48,839.—J. F. ROCHOW, New York, N. Y.—*Portable Water Apparatus.*—July 18, 1865.—This invention has for its object the conversion of salt water into fresh, and this it does by first converting the salt water into steam, and then impregnating the steam while on its way from the boiler to the condenser with a sufficient quantity of fresh air to produce, after its condensation, thoroughly aerated and potable water. A double packing is arranged on both ends of the condensing tubes in such a manner that if a leakage takes place the salt water is not permitted to mix with the steam to be condensed, or the water into which it has already been condensed.

Claim.—First, the injector A, applied in combination with the steam pipe *t*, and condenser C, in the manner and for the purpose substantially as herein described.

Second, the arrangement of a double packing at the ends of the condensing tubes, with open spaces intervening between said two packings, substantially as and for the purpose set forth.

Third, constructing the condenser C with diminishing compartments, substantially as and for the purpose specified.

Fourth, the horizontal partitions between the ends of the condensing tubes, in combination with the sheets *n*, in the interior of the condenser, constructed and operating substantially as and for the purpose described.

No. 48,840.—PETER RODIER, Springfield, Mass.—*Clutch-pulley for Driving Sewing Machines.*—July 18, 1865.—The object of this invention is to prevent the shaft from being driven in the wrong direction, which is effected by means of a pulley placed loosely on the shaft, with collars on the same shaft and spring pins with corresponding notches.

Claim.—The combination of the pulley C of a sewing machine loose on the shaft D with the collars A and B on the same shaft, and the spring pins *b b*, and corresponding notches *a a a a*, substantially in the manner and for the purpose described.

No. 48,841.—THADDEUS S. SCOVILL, Williamsport, Penn.—*Apparatus for Obtaining Oil from Running Streams.*—July 18, 1865.—In this invention a sunken boom directs the current to the desired channel; a swinging boom on the surface guiding the oil in the same direction into a race having sluice gates at its bottom, to permit the escape of water in the desired quantity, and a chute at its top for the flow of oil into a reservoir; which latter has also sluice gates at its bottom to permit the flow of whatever water may still remain with the oil.

Claim.—The combination of the swinging or movable oil-gathering boom B, oil-collecting race G, with its under gate or gates *o*, and chute *c*, and the oil reservoir H, arranged substantially as and for the purpose herein specified.

Also, in combination with the oil-gathering bar, the sunken channel bar E, arranged and operating substantially as and for the purpose herein set forth.

No. 48,842.—JACOB C. SEELEY, Cambridge, Mass. —*Hinging Coffin Lids.*—July 18, 1865.—This invention consists in applying the hinges of the lid of a coffin in such a manner that the joints or pivots of the hinges are in rear of the joint between the cover and lid, and at such a distance as shall allow the lid to swing back of the inscription plate.

Claim.—Hanging a coffin lid by hinges, the pivots of which are placed in the rear of the whole joint between the lid and the main cover, substantially as and for the purpose set forth.

No. 48,843.—HIRAM C. SHERMAN, Buffalo, N. Y.—*Machine for Driving Hoops on Casks* —July 18, 1865.—Attached to a screw shaft revolved by gearing is a head to which are pivoted pendant drivers, which are adjusted to the side of the cask by a cam disk with projections on the periphery that force the drivers outward as it is turned, and by revolving the screw shaft, the head is depressed and drives the hoops upon the cask.

Claim.—First, attaching the driving bars H H to the direct acting non-revolving screw shaft E, by means of the head K, or its equivalent, so that said bars are suspended above and in a position to engage with the hoops on the barrel L, the whole arranged and operating substantially as and for the purpose set forth.

Second, pivoting or loosely hanging the bars H to the head K, by means of the joint *b*, or its equivalent, so that said bars may gravitate freely, substantially as set forth.

Third, in combination with the suspended driving bars H, the disk M, with its series of cams *f f*, and springs *d d*, or their equivalent, arranged and operating substantially as and for the purposes set forth.

No. 48,844.—ANDREW SHOGREN, Sandwich, Ill.—*Plough Clevis.*—July 18, 1865.—This invention consists in arranging in that part of the clevis exposed to wear, hard cast iron, in such a manner as to be easily detachable, when required to be removed.

Claim.—Providing a clevis with a cas-tiron lining or jacket, substantially as set forth and specified.

No. 48,845.—THOMAS SKELTON, Rockford, Ill.—*Horseshoe.*—July 18, 1865.—This invention consists of a shoe hinged at the toe, and having flanges upon its upper side to fit the shape of the hoof, and hold it on; a rigid bar is secured to the heel points, by means of calks which pass through the bar and screw into the shoe. A plate of the shape of the bottom of the shoe is also secured to it by the calks, to give greater strength when required; to the centre and upper side of the cross-bar, at the heel, is secured by a rivet a spring, the ends of which project upward against the heel of the horse, and bear lightly so as to gradually expand the hoof.

Claim.—First, a jointed flanged shoe combined with a bottom plate and bar, when arranged substantially in the manner described for the purpose set forth.

Second, a jointed flanged shoe combined with a bottom plate, rigid bar, and spring, arranged substantially in the manner described for the purpose set forth.

No. 48,846.—JAMES B. SKINNER, Rockford, Ill.—*Gang Plough.*—July 18, 1865.—This invention consists in arranging the ploughs before and behind an adjustable axletree, and on a rigid frame; in such an adjustment of the tongue that it can be made rigid or flexible at will; in providing for placing three or more horses abreast; in an adjustable gauge wheel forward of the ploughs; and in devices for raising the main frame from the ground, or to regulate the depth of the ploughing.

Claim.—First, the combination in a gang plough of one or more ploughs before and one or more ploughs behind the supporting axle where the ploughs are firmly attached to a rigid frame which is itself adjustable upon and in relation to the axle, substantially as set forth.

Second, the combination of the tongue with the main frame by a hinge and lock, substantially as described to render it rigid or flexible at the will of the driver.

Third, the combination of a clevis with the main frame of a gang plough and the tongue whether rigid or flexible, substantially as described to, work three or more horses abreast and equalize the draught between them.

Fourth, the attachment of the left supporting wheel of a gang plough to a crank axle to

preserve the desired parallelism of the axle to the ground, substantially in the manner set forth.

Fifth, the combination of an adjustable gauge wheel with the rigid main frame of a gang plough, when arranged forward of the ploughs, substantially as and for the purpose set forth.

Sixth, the combination in a gang plough of a rigid main frame and an adjustable axle with a mechanism for raising and lowering the frame, substantially in the manner described for the purpose set forth.

Seventh, the combination of the main frame, the axle, and standards by the draught rod and reach or guides, substantially in the manner described for the purpose set forth.

No. 48,847.—R. A. SMITH, Philadelphia, Penn.—*Vessel for the Reception and Transportation of Night Soil.*—July 18, 1865; antedated July 6, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—The box G, rollers *f*, tight-fitting detachable cover H, having the tubular projection *h*, and its cap *i*, the whole being constructed and adapted for the reception and transportation of night soil and garbage, as set forth.

No. 48,848.—G. K. SNOW, Watertown, Mass.—*Paper-Collar Packing Envelope.*—July 18, 1865.—In this invention a cylindrical box of stiff paper, or paper board, has a thin covering so prolonged as to afford a packing at the ends.

Claim.—As a new manufacture, the said envelope, substantially as described and for the purpose specified.

No. 48,849.—M. A. SPINK, De Kalb, N. Y.—*Stubble Coulter.*—July 18, 1865.—This invention consists in making a shank with a curvature near the lower part and terminating at its junction with the blade. The blade projects upward near the plough beam, and has a curved point.

Claim.—The herein described coulter, consisting of the shank A, and blade B, the same being constructed as and for the purpose set forth.

No. 48,850.—J. W. STEVENS, South Danvers, Mass.—*Steam Blower.*—July 18, 1865.—The object of this invention is to maintain, urge, and increase combustion of fuel in furnaces employed for generating steam, and for other purposes. It consists in the combination of the steam blower, pipe, jet holes, and cock.

Claim.—Combining with the steam blower pipe *b c* and its jet holes a cock *d*, in the manner and for the purpose substantially as set forth.

No. 48,851.—NATHAN P. STEVENS, Boston, Mass.—*Piston for Steam Engine.*—July 18, 1865.—This invention consists in arranging the cut portion of a single packing ring upon the lower side of the piston, when the flanges of such piston are made to fill the bore of the cylinder, and when a pin is secured to the piston and passes through the cut portion of the ring for the purpose of securing the ring in the proper position.

Claim.—Arranging the joint of the expansion ring at the lower part of the piston head and on the bottom of the bore of the cylinder, and providing such ring and piston with a means of preventing the ring from revolving in its groove, the whole being substantially as and for the purpose set forth.

No. 48,852.—NESBITT D. STOOPS, Newark, N. J.—*Carriage and Caster for Sewing Machine.*—July 18, 1865.—The object of this invention is to supply the means of moving a sewing machine from place to place without lifting, and at the same time to secure the machine from rolling or slipping away from the operator when in use.

Claim.—First, the apparatus described for mounting a skeleton-frame sewing machine upon a carriage, substantially in the manner and for the purposes explained.

Second, constructing a caster so as to lock and unlock, substantially in the manner and for the purpose described.

Third, socket J, when used for the mounting of a skeleton-frame sewing machine on a carriage, to prevent undue elevation of the machine.

Fourth, caster frame H, so constructed as to support the caster above the top of the platform, and also to prevent undue elevation of the machine, by letting the caster up into the platform.

Fifth, the combination of platform A, caster B, pawl F, socket J, and caster frame H, or their equivalents, constructed and operating together, substantially as described.

No. 48,853.—A. W. TODD, Chicago, Ill.—*Steam Pump.*—July 18, 1865.—This invention consists in a peculiar combination and arrangement of a steam cylinder, its piston, valve rod, inlet pipe, cross-head, &c., whereby the tender of a locomotive engine or other reservoir may be filled with water or other liquid at one stroke of the piston of the said steam cylinder.

Claim.—The combination and arrangement of the cylinder K, levers 4 4, piston T, valve rod F, inlet J, pipe L, cross-head C, rod H, pipe P, fulcrum M, and ropes I I, substantially upon the principles and in the manner herein set forth.

No. 48,854.—STEPHEN USTICK, Philadelphia, Penn.—*Table for Invalid.*—July 18, 1865.—The top of the table is constructed with several principal compartments for work, visiting, and dressing cases. On the under side of the cover are placed a portfolio and a looking-glass, which are arranged to be reversed for use. A movable rest is provided for the support of these reversible covers. By the side of the portfolio is arranged a screen on a perpendicular stem. This screen may, however, be placed on any part of the table and at any height required. At each end of the table is arranged an adjustable upright, and these uprights being connected by a rigid rod, form a rack for the support of a newspaper or book.

Claim.—First, the combination of the foot pieces *b* with the legs *a* of the table C, when constructed, arranged and operating substantially as described.

Second, combining and arranging the cord *m'*, and clamps *o o*, with the table C, by means of the uprights *m m*, substantially as and for the purpose set forth.

Third, combining the longitudinal guides or ways F F with the table C, substantially in the manner and for the purposes above described.

Fourth, the combination and arrangement of the box G, rest H, pen rack I, pincushion J, clamps K, and screen L, with the table C, by means of the longitudinal guides or ways F F, substantially in the manner described and for the purposes specified.

Fifth, combining and arranging the endless apron P, with the table C, by means of the frame O and guides F F, substantially as and for the purpose specified.

No. 48,855.—HENRY WENGER, Farmersville, Penn.—*Water Wheel.*—July 18, 1865.—This invention consists of a horizontal wheel having a disk upon the top, which disk has openings to admit a free flow of water through corresponding openings or chutes in the upper part of the wheel, near the periphery thereof. A ratchet arrangement attached to the exterior case serves to move the auxiliary disk, and thus to open and close the chutes.

Claim.—The arrangement and combination of the water wheel K, with its buckets *m*, on its vertical periphery M, within the vertical casing A, chutes *a*, on top, disk B, with its valve *b*, and cogged valve *b'*, operated in the manner and for the purpose set forth.

No. 48,856.—AMOS WESTCOTT, Syracuse, N. Y.—*Sash Fastener.*—July 18, 1865.—In this invention a knob, which is arranged to slide vertically, has a stud projecting into an opening in the sash frame, and through a horizontal slot in a triangular piece which is pivoted to the sash frame, in line with its horizontal slot. This pivot projects further inward and supports a slotted slide, to which is attached the spring-actuated stop; the triangular piece has two cams, one above and one below the pivot; these cams work against corresponding stops upon the slotted slide, so that when the knob is moved either up or down it will draw the stop, and allow the sash to be moved in either direction.

Claim.—First, the manner of connecting the bolt D to the slotted piece I, Fig. 5, as and for the purpose substantially as above described, in combination with the triangular piece J, and the shank M, Fig. 2, of the knob C, Fig. 1, essentially as above described.

Second, the arrangement, consisting of the straight moving slide K, oscillating device J, and bolt D, the said parts operating together substantially in the manner and for the purpose described.

Third, the manner of sustaining and guiding the slotted piece I, Fig. 2, substantially as above described, in combination with the bolt D, triangular piece J, Fig. 2, and knob C, and plate B, Fig. 1, substantially as above described.

No. 48,857.—G. WESTINGHOUSE, Schenectady, N. Y.—*Sawing Machine.*—July 18, 1865.—This invention consists in the employment of a movable weight, arranged upon a lever so as to be made to balance the saw and its connections, or so much thereof as is desired; also, in a stop to gauge the length of the log to be cut off, by which the feed gear is thrown out when the log has been moved to the required point.

Claim.—First, the combination of the lever L and adjustable weight Z with the beam G, for raising, lowering, and counterbalancing the saw, as set forth.

Second, the pivoted bar V, when provided with the projection W, and connected by means of the bar X and lever Y to the lever T, substantially as and for the purpose specified.

Third, the log-carrier or log-feeder, composed of two heads U U, made separate or detached from each other, and placed on the shaft O permanently, or so that either or both may be adjusted thereon, for the purpose specified.

No. 46,858.—WILLIAM WESTLAKE, Chicago, Ill.—*Lantern.*—July 18, 1865.—The lamp pot and flanges are constructed in such a manner as to allow the guard to be attached to the bottom and readily separated; also, in a combination of a hole for lighting, a sliding door, and a recess cut in the bottom of the glass globe, corresponding with the same.

Claim.—First, the construction of a lamp pot *e* in connection with the flanges *d* and *g*, substantially as recited, allowing the guard to be attached to the bottom, and the lamp and

the bottom to be readily separated from the glass or globe and guard and dome, as herein set forth.

Second, the hole *h* with the sliding door *i* in combination with the recess *j* of the globe for lighting of the lamp, as herein recited.

No. 48,859.—Wm. Wharton, Jr., Philadelphia, Penn.—*Railway Frog.*—July 18, 1865.—This invention consists of a frog, having a recess for the reception and lateral and vertical retention of a continuous rail of a main track; all so constructed and arranged in respect to a rail of an intersecting track as to afford a medium for permitting wheels of cars traversing the latter track to pass across the rail of the main track.

Claim.—A frog H, having a recess for the reception and lateral and vertical retention of a continuous rail of the main track, and so constructed and arranged in respect to a rail of the intersecting track as to afford a medium for permitting the wheels of cars traversing the latter track to pass across the rail of the said main track, all substantially as described.

No. 48,860.—S. G. Wilmot, Brooklyn, N. Y.—*Kerosene Burner.*—July 18, 1865.—This invention consists in making the burner of pieces of sheet-metal, cut and formed as set forth in the claim.

Claim.—First, the arms D3, or their equivalents, on the seamless dome D, made from the same piece of metal and serving to unite it with the bottom A along short lines A4, substantially in the manner and with the advantages herein set forth.

Second, bending outward the ears D2 formed from the metal cut out of the dome itself, substantially as and for the purposes herein set forth.

Third, the wick tube B B′ soldered along the edge, substantially as and for the purposes herein specified.

Fourth, the seamless and legged dome D D3, as a new article of manufacture, adapted to be cheaply made by the means set forth, and to be afterwards connected to the parts A B.

Fifth, the method herein described of manufacturing the seamless skeleton dome D by forming the same from a blank cut in shape before forming, and afterwards striking or swedging in dies, so as to produce the legs D3, having between them the openings required for the admission of the air, without further cutting, all substantially in the manner and with the economy of material and of labor herein set forth.

No. 48,861.—Joseph Wood, Red Bank, N. J.—*Fluid Ejector.*—July 18, 1865.—This invention consists of a curved pipe, each leg of which is composed of any number of sections that may be necessary, and joined together in any convenient manner, the first and straight section being connected with the lower curved section by means of a smaller pipe; just at the lower end of which there are apertures cut in the curved pipe for the ingress of the fluid to be ejected. The steam or air is admitted into the straight section, and passes through the small pipe with sufficient velocity to induce an influx of the fluid, which is carried forward to the point of delivery by the force of the agent employed.

Claim.—The employment of a curved pipe, provided with an aperture C or several similar apertures, placed at a point in the pipe where it or they shall be below the surface of the fluid to be elevated, and in advance of the point in the pipe where the steam or air, which is the propelling power, is admitted, in the manner and for the purpose substantially as described.

No. 48,862.—Wm. W. W. Wood, Philadelphia, Penn., and J. L. Lay, Buffalo, N. Y.—*Submarine Steam Gun.*—July 18, 1865.—This invention consists in providing in one side of the ship and below the water-line an aperture, which is closed by a ball and socket joint. This joint has connected with it a tube, which extends inward, and terminates in a box in which is a trunk with two compartments for containing the shells. This trunk is capable of being moved in the box, so that while one shell is being discharged another can be placed therein. To the rear end of this box a steam cylinder is placed, having a piston therein, which, when the shell is placed in the trunk, has steam admitted in the rear by means of suitable valves, and is pressed forward with such force as to eject the shell and force it to a considerable distance. The piston rod is hollow, and a cord is passed through it, and is wound around a spool upon its outer end. The opposite end of this cord is secured to the shell, and thus, when the shell has travelled any determined distance, the cord is made to discharge it.

Claim.—First, projecting submarine shells from vessels by means of a steam cylinder and piston and piston rod acting against the rear of the shell, substantially as described.

Second, the cylinder in combination with the tube F through which the shells are forced by the piston rod of said cylinder, substantially as specified.

Third, the combination of the tube F with the pipe E and the ball joint, substantially as set forth.

Fourth, the movable trunk H, constructed and arranged in respect to the stnam cylinder and discharge tube F, substantially as set forth.

Fifth, the combination of the said movable trunk with the box G and its doors *j*, substantially as specified.

Sixth, the combination of the pipe E and its spherical end *a*, the pipe F, the box G, its trunk H, and steam cylinder K, with the truck L and elevating screws M M.

Seventh, the spool or roller *a*, arranged at the end of the external piston rod, for receiving the discharging cord.

No. 48,863.—CARL L. ZEIDLER, Cincinnati, Ohio.—*Mortising Machine.*—July 18, 1865.—This invention consists in so attaching the chisel to a disk that it can, by the action of a treadle upon a sliding box which is around a revolving shaft, and a toggle arm which passes through an eccentric slot in the driving wheel and is connected with a cam with a similar slot, so that as the wrist pin, which is fast to the cam, is thrown out towards the periphery of the cam, give a greater length of stroke to the chisel, or, when the cam revolves concentrically to the shaft, it imparts no motion to the chisel.

Claim.—First, the sheave or wrist F, pivoted eccentrically upon its driving shaft, and employed to give motion to a mortising chisel or analogous tool at the will of the operator.

Second, the toggle arm J and sliding box I in combination with a treadle lever or its equivalent, and with an eccentric sheave or wrist for throwing the tool into and out of action, substantially as set forth.

No. 48,864.—T. C. ANDREWS, assignor to himself and PETER GORDON, Jersey City, N. J.—*Machine for Cleaning Boots and Shoes.*—July 18, 1865.—This invention consists of a machine for cleaning and polishing boots and shoes, which may be operated by a hand lever or by a foot treadle, at pleasure, while the boot is on the foot of the operator, either in a standing or sitting position.

Claim.—The arrangement of the hand lever G and treadle H upon the same fulcrum *e*, in combination with the crank *f*, fly-wheel shaft D, and pin wheel *d*, pinion *c*, and rotary brush shaft C, substantially as and for the purpose herein specified.

No. 48,865.—V. R. DAVID, assignor to himself, H. R. FOWLER, and N. G. DAVIDSON, Newark, Ill.—*Washing Machine.*—July 18, 1865.—This invention will be understood by reference to the claim and engraving.

Claim.—First, the combination and arrangement of the drive wheel D, the support or standards C, the frame B, and the pinion H, provided with the hollow journal, when all constructed and operating substantially as described.

Second, the combination and arrangement of the pinion H with the hollow journal, the iron head, and the arms K, when constructed and operating substantially as and for the purposes herein set forth.

No. 48,866.—L. S. FAIRCHILD, assignor to himself and G. F. FRENCH, Cleveland, Ohio.—*Water Wheel.*—July 18, 1865.—This invention consists of a horizontal wheel, composed of three buckets radiating from the hub, and having no other attachment or connection. It is operated by water passing through two curved flumes, each flume having a gate pivoted centrally, and both gates being so geared as to be opened and closed simultaneously, the wheel moving a little below the level of the bed or floor on which the flumes are constructed. A descending annular flange serves to prevent the escape of the water otherwise than through the concavity of the buckets.

Claim.—The herein-described water wheel, consisting of the bed A, chutes C C, wheel H I J, gates E, connected as described, when the several parts are constructed and arranged as and for the purpose herein set forth.

No. 48,867.—EMMA HILL, assignor to THOMAS DOLAN, Philadelphia, Penn.—*Lady's Hood.*—July 18, 1865.—This invention is explained by the claim and engraving.

Claim.—A lady's hood, composed of the four pieces A B B′ and C, formed, arranged, and stitched together, substantially in the manner described.

No. 48,868.—JOSIAH HOLMES, Pittsburg, Penn., assignor to HUSSEY, WELLS & COMPANY.—*Machinery for Rolling Tapering Bars or Plates.*—July 18, 1865.—This invention consists in forming in the pressure screw of the housing of rolls a cylindrical chamber, in which fits and plays a plunger, the lower end of which rests upon the rider or top bearing of the upper roll. The taper is given by the gradual widening apart of the rolls, the upper end being permitted to rise by the pressure when in operation, causing the plunger to force the water in the chamber out through a valve at the top, the opening through which is adjusted to regulate the speed of the ascent of the upper roll to suit the work to be accomplished thereby.

Claim.—The use of the plunger, water chamber, and valves, constructed and arranged substantially as hereinbefore described, situate in and forming part of the pressure screw of rolling mill housing, for the purpose of rolling tapering metallic bars or plates.

No. 48,869.—EDWIN A. JEFFERY, assignor to the AMERICAN BASKET COMPANY, New Haven, Conn.—*Machines for Forming Baskets.*—July 18, 1865.—This invention consists of a former, over which the material is placed and bent into shape. The basket is made of thin veneering, and is cut in sheets of the proper size, so that two sheets are used, and the grain of

the wood crossed. A clamp is brought forward by means of a treadle, having hinged winged clamps upon all sides to fit the former, which, as the treadle is set down, clamps the stuff over the former, where it is held until the basket is finished.

Claim.—First, the combination of a former B with a head H and folders *a a*, constructed to operate substantially in the manner and for the purpose specified.

Second, closing or folding the sides of the basket by means of the folders *a a*, substantially as specified.

No. 48,870.—THOMAS J. JONES, assignor to himself, GEORGE WETTENGELL, and JOHN D. RICHARDS, West Pittsburg, Penn.—*Steam Boiler.*—July 18, 1865.—This invention consists of a scraper attached to a rod, inserted through a stuffing box in one end of the boiler, by which the operator is enabled to move the same along in contact with the bottom surface of the boiler, and thus remove any deposit that may be collected there, and cause it to fall into the draw below. In order to prevent the scraper from being obstructed by the seams and rivet heads of the boiler, shoes are placed under each end of the scraper, which have a curvature sufficient to carry the scraper over these obstructions.

Claim.—The combination with a steam boiler of a scraper attached to a rod, inserted through a stuffing box in one end of the boiler, for the purpose of removing the sedimentary or residual deposit from the bottom of the boiler, substantially as and for the purpose hereinbefore described.

Also, the shoes in the edge of the scraper, to enable it to pass the overlapping ends of the boiler plates, substantially as hereinbefore set forth.

No. 48,871.—SEBASTIAN KELLER, Elizabethtown, Penn., assignor to himself and JACOB L. GOOD, Lancaster county, Penn.—*Combined Seeder and Cultivator.*—July 18, 1865.—This invention consists in the combination and arrangement of a five-pointed star crank, with pins placed around the wheel on one side at equal distances apart, the said wheel being supported by brackets in the hopper frame. It also consists in the connection of the valves with the double crank by means of connecting rods, whereby the seed is discharged from the hopper.

Claim.—First, the construction of the semi-circular crank U, and crank *e'*, forming the top of the pulley shaft *e*, in combination with the friction pulley *d*, saddle step and spring brace connection *f*, arranged and operating substantially in its adjustability in the manner and for the purpose specified.

Second, the five-pointed star crank V, for operating the valve 1, in combination with the pin or pins *h*, on the face of the driving or roller pulley D, constructed and operating in the manner set forth.

Third, the flat-sided roller pulley D, supported in the brackets *a a*, for the vibrating hopper frame B B, in combination with the pivot rod attachment to the cultivator, in the manner and for the purpose specified.

Fourth, the construction and operation of the valves 1, 2 and 3, in combination with the connecting rods R S T, and the double crank U *e'*, and star crank V, operated in the manner described.

No. 48,872.—LOOMIS G. MARSHALL, Mokena, Ill., assignor to himself and F. W. HUGHES, Pottsville, Penn.—*Drill.*—July 18, 1865.—This invention consists in an arrangement of levers operated by cams, for working the drills, and in arranging certain gearing and rolls for raising and lowering the drill. Also, in the combination of the various parts of the drill, as designated in the claim.

Claim.—First, the arrangement and combination of the devices D E G J and K of the machine, as herein described and for the purposes set forth.

Second, the arrangement and combination of the devices 2 R T V and W of the drill J, when constructed and combined as herein described, and for the purposes set forth.

No. 48,873.—BENJAMIN T. MILLBURN, Wilmington, Del., assignor to himself and JOSEPH RIGBY, Brandywine, Del.—*Railway Car.*—July 18, 1865.—This invention consists in so constructing railway chairs that they will readily yield to the expansion and contraction of the rails.

Claim.—The combination of the chair pieces A and B, the stirrup C, and the rails D D, constructed and operating substantially as described, for the purpose set forth.

No. 48,874.—W. T. MUNGER, Bradford, Conn., assignor to himself and JAMES GRAHAM, New Haven, Conn.—*Extension Door-knob.*—July 18, 1865.—In this invention the rose is formed with an opening in the centre, made semicircular at one end, and at the other end square, and elongated from the centre one diameter in order to admit the square spindle, which in this case has the corners notched or grooved, in which grooves the semicircular end of said opening fits. In the top of the rose which receives the end of the shank is an inwardly projecting lip or stud, which passes through a notch or opening in a collar on the end of said shank. The spindle is first introduced in the rose, with its collar in the proper groove to suit the thickness of the door; the knob is then slid upon the spindle, and inserted

in the recess of the rose, which is so placed that the lip therein will pass through the notch in the collar on the end of the shank, and is then turned so as to pass behind it and secure all the parts together. Instead of the oblong opening and a notched or grooved spindle, screw threads may be formed on the spindle, and in a circular opening in the inner face of the rose, to fit each other, and the shank may be secured thereto in the manner described.

Claim.—The combination of the grooved shank *f* with a lip *e*, or its equivalent, in the socket of the rose, in the manner and for the purpose described.

No. 48,875.—MARTIN NEWMAN, assignor to himself and CLARK J. HAYES, Unadilla, N. Y.—*Sawing Machine.*—July 18, 1865.—This invention consists in arranging the feed rollers so as always to have them in a position to prevent either end of the rollers from rising or falling without the other, through the medium of the upper feed roller being hinged to a fixed frame, under which is a fork that is attached to a lever, by moving which the fork is raised against the roller arm, and thus raises the roller.

Claim.—First, combining with the yielding rolls of a pair or pairs of feed rolls, a lifting piece and a lever, so that the operator from his stand may rise up, hold up, or let down said yielding rolls at will, substantially as described.

Second, in combination with yielding rolls, hung at both ends, the connecting of said end supports by a rigid roller cap, to prevent one end of said roll from rising or falling independent of its other end, and to make the pressure on the board uniform at both edges, and thus cause it to move in a direct line, substantially as described.

Third, shifting the movable saw upon its shaft by means of the levers and link connection herein described and represented, whereby a quicker motion is got, and thus economizing time, substantially as described.

No. 48,876.—GEORGE W. PRATT, assignor to himself and WILLIAM P. MARTIN, Salem, Mass.—*Mode of Embossing Leather.*—July 18, 1865.—This invention consists in pebbling or embossing leather by placing the grain side in contact with a flat surface, having the design formed in it, and applying the rolling or rubbing tool under pressure to the flesh side of the skin.

Claim.—Pebbling or embossing leather or other treated skins, by placing the face or grain side in contact with a flat or nearly flat surface, having the design formed in it, and applying the rolling or rubbing tool under pressure to the flesh side of the skin, substantially as described.

No. 48,877.—RICHARD C. ROBBINS, assignor to J. M. and G. W. KEEN, New York, N. Y.—*Diaphragm Pressure Gauge.*—July 18, 1865.—This invention consists in securing the diaphragm between the bar and the binding ring, by means of a screw thread cut in the interior of an upward projecting flange on the former, and a corresponding thread on the periphery of the latter, forming a male and female screw, by which the two are secured together; instead of the employment of a number of small screws passing through the ring and diaphragm, and into a screw threaded hole in the bar.

Claim.—A diaphragm holder, having a female screw on one part and a male screw on the other part, by which the diaphragm is firmly secured and held in its place, thus dispensing with bolts or screws, and obtaining a more perfect diaphragm, as herein fully described and set forth.

No. 48,878.—NATHANIEL W. WESTCOTT, Providence, R. I., and HENRY L. WALCOTT, Charles River Village, Mass., assignors to JAMES G. PAYSON, Foxborough, Mass.—*Machine for Knitting Shoe Lacings, &c.*—July 18, 1865.—In this machine a number of strands of yarn coming directly from the spun cops, and without being twisted together, are supplied to a common spring-barbed needle, and knitted into a chain by the usual knitting or crochet stitch. The barb is lifted positively by an inclined foot on the thread carrier, to allow of the certain introduction under it of the several strands, and the barbs are closed by a rigid presser; the presser and thread carrier both being firmly secured to a reciprocating slide bar.

Claim.—First, the combination of the needle bar E, carrying one or more needles, with the rest bar E, constructed, arranged, and operating substantially as described.

Second, the looping pin *d*, or its equivalent, in combination with the needle A, and operating substantially as and for the purpose described.

Third, the shear or guard *n*, or its equivalent, operating substantially as and for the purpose described.

Fourth, the depresser *h*, or its equivalent, in combination with the needle A, and operating substantially as described, for the purpose specified.

Fifth, the mode of operation described, by which the point of the needle tongue is first positively raised and carried over the loose yarns which are to form the succeeding loop, by the interposition of a suitable instrument, and afterward immediately depressed to the requisite extent to permit the loop already formed to be cast off, substantially as described.

No. 48,879.—CHARLES P. WIGGINS, assignor to CASE, MARSH & WIGGINS, Indianapolis, Ind.—*Sawing Machine.*—July 18, 1865.—This invention consists of a guide frame with two

arms to which the crotched guide is fastened, the arms of which brace to each other, and are attached to a pivot bar which is so fastened to the frame that it will admit of a rocking motion.

Claim.—The arrangement of the saw guide J, set screw L, guide frame K K, with slotted foot or pivot bar S S and M, when constructed and operated substantially as set forth.

No. 48,880.—LEVI WILSON, assignor to J. NELSON BUELL, Middletown, Conn.—*Protection for Pump and other Oscillating Rods.*—July 18, 1865; antedated July 14, 1865.—In this invention a pump or other rod operated by a lever is encased within a cover oscillating with it, the case or cover being narrow at the top and expanding toward the bottom, where it is pivoted at its centre to the top of the cylinder, down which the rod is continued.

Claim.—First, the coaming E, and top piece G, so arranged relatively to the reciprocating and vibrating rod D, as to allow the top piece to cover and enclose the coaming, and to move thereon to accommodate the lateral portion of the rod, substantially as and for the purpose herein set forth.

Second, the central pivots or axes I, arranged relatively to the coaming E and G, and rod D, substantially in the manner and for the purpose herein set forth.

No. 48,881.—JAMES GILMOUR, Glasgow, North Britain.—*Harmonium.*—July 18, 1865.—This invention has for its object, among other things, the softening and swelling of the bars and treble divisions of the instrument independently of each other; the production of a more refined tone than has hitherto been obtained, by causing the sound from the reeds to travel to a greater distance than formerly before emitting, so as to produce a sound as nearly as possible like that of an organ; the production of a greater and more effective variety of sound and finer toned instruments than heretofore, at a considerably reduced cost.

Claim.—The arrangement and construction of musical instruments, substantially as herein before described, or any modification thereof.

No. 48,882.—PIERRE HUGON, Paris, France, assignor to EMIL JUSTH.—*Apparatus for Carbonizing Wood.*—July 18, 1865.—This invention consists of a furnace capable of being moved in either a horizontal or vertical direction. The furnace is connected to a blast apparatus by means of a flexible tube and a pipe; a fine stream of water flows into this tube from a tube connected with a water reservoir, and the pipe is surrounded by a water chamber to prevent the heat from affecting the flexible tube. The wood to be acted upon is passed before the nozzle, being supported on rollers attached to a suitable frame.

Claim.—First, the method herein described of charring or carbonizing wood, disintegrating rocks, roasting or fusing ores and metals, by direct application in the form of a jet of inflammable gases generated in and directed by a movable apparatus, substantially in the manner herein shown and set forth.

Second, an apparatus for carbonizing wood, disintegrating rocks, &c., composed of a furnace or fire chamber, movable upon a stationary frame, both vertically and horizontally, and provided with a nozzle, in combination with a suitable blowing apparatus, substantially as set forth.

Third, in combination with a movable furnace and blowing apparatus, under an arrangement for operation substantially as described, an apparatus for injecting water or steam, in the manner described, so as to mix with the air previous to its passage through the furnace, for the purpose set forth.

No, 48,883.—D. D. ALLEN, South Adams, Mass.—*Valve.*—July 25, 1865.—This invention consists in a flat disk valve with two or more passages running through it on a flat seat provided with two or more ports which communicate with the receiving and discharge pipes. When the valve is turned, and its passages made to register with the ports in the seat, a free and unobstructed communication is effected between the pipes which connect with the several ports in the seat, and a valve is obtained which is said not to be liable to leak, and to be readily accessible when required.

Claim.—The valve A C in combination with the spring *h*, and tongue *i*, and belt *d*, substantially as and for the purpose described.

No. 48,884.—W. D. AMENT, Muscatine, Iowa.—*Cultivator.*—July 25, 1865.—This invention consists of a metallic adjustable plate cast in one piece for operating the adjustable plough beams.

Claim.—The adjustable metallic plate G formed or cast in one piece, with the bearings I, substantially as described.

No. 48,885.—SHERMAN E. ANTHONY, Stillwater, N. Y.—*Shingle Machine.*—July 25, 1865.—This invention relates to a shingle machine which employs two circular saws for sawing the shingles, and the invention consists in placing the saws so that they will occupy an angular position relatively, and that when the bolt is passed to the saws they will cut alternate bolts and points.

Claim.—The circular saws C C when arranged and operating as described, in combination with the endless toothed chains, for the purposes substantially as set forth.

No. 48,886.—WILLIAM ARTHUR, Brooklyn, N. Y.—*Apparatus for Compressing Air.*—July 25, 1865.—An air pump is combined with a series of air vessels by means of pipes and stop-cocks, or valves, in such a manner that the air compressed into one air vessel may be used to supply the pump when compressing air into one or more other air vessels to a higher tension, the air entering the pump barrel being thus already compressed to a certain tension. The amount of increase in tension which the pump is required to produce need not exceed that at which it will work advantageously. In the last reservoir in the series the air is further compressed by forcing water into the lower part thereof by means of another pump.

Claim.—The combination of the air pump employed to compress air with a series of air vessels by means of pipes and stop-cocks connecting the air pump and air vessels, substantially as herein before set forth, in such manner that the air which has been compressed into one air vessel may be used to supply the air pump when compressing the air to a greater extent in another air vessel, substantially as herein set forth.

Also, the combination of the said apparatus with a water force pump to increase the pressure of the air in the last vessel, substantially as herein set forth.

Also, the conical construction of the vessel of the series into which the air is ultimately compressed when such vessel is combined with a water force pump, substantially as set forth.

No. 48,887.—JOHN B. ATWATER, Chicago, Ill.—*Amalgamator.*—July 25, 1865.—This invention consists of a revolving cylinder closed at both ends and provided with a case, and around the circumference of the cylinder are arranged a series of plates. These plates are supported at each end of the cylinder by the bearings, and are made to change their positions as the cylinder revolves by means of the pins and a cam.

Claim.—First, the application of oscillating plates, or their equivalents, to the circumference of a cylinder which is arranged to rotate within a vessel A, substantially as described.

Second, so applying movable plates to a rotating cylinder, or its equivalent, which is arranged within a vessel adapted for containing melted lead or mercury, that said plates will operate automatically for receiving and discharging the quartz, substantially as described.

No. 48,888.—JOHN B. ATWATER, Chicago, Ill.—*Lady's Work Stand.*—July 25, 1865.—The object of this invention is to provide a table with one or more trays in such a manner that they can be elevated and supported above the top of the table when in use, and depressed beneath the table top, at pleasure.

Claim.—Providing a table with one or more trays, or their equivalents, which can be elevated above the top of the table or depressed beneath said top, substantially as described.

No. 48,889.—J. R. BAKER, Kendallville, Ind.—*Device for Operating Window Sash.*—July 25, 1865.—This invention consists in balancing the sash by means of racks upon each sash and a pinion between; but the rack upon the upper sash is only about half the length of the sash. The pinion is adjustable vertically, and when the upper sash has been covered half way, where it rests upon stops projecting from the frame, the pinion may be pushed up so as to disconnect it with the upper sash, and the lower sash operated independently of the upper one.

Claim.—The employment of one or more vertically adjustable spur wheels applied to a window frame, in combination with toothed racks applied to the sashes, said parts being so arranged that the sashes can be connected together, and made to counterbalance each other, or the lower sash operated independently of the other, at pleasure, substantially as described.

No. 48,890.—H. A. BARNARD, Marine, Ill.—*Grain Separator.*—July 25, 1865.—A suction fan is so arranged between the air trunk and the screen and shaking shoe, and in relation to the inlet and outlet passages of the same, that two separations of the grain shall take place while it has one continuous path through the machine. A rapid shake motion is imparted to the sieves by means of an open cam or eccentric. The pipe or trunk which carries the feeding spout is made adjustable, so that it may be turned in either direction in order to facilitate the feeding in of the grain to be cleaned.

Claim.—First, the arranging of a suction fan B between the air trunk F and the screen and shaking shoe, and in relation to the inlet and exit passages thereof, so that two separations of the grain from its impurities shall take place, while the grain has one continuous path through the machine, substantially as herein described and represented.

Also, the combined use of an open cam or eccentric, and a coiled spring, for giving a light but rapid shake motion to the sieves, substantially as herein described and represented.

Also, making the pipe or trunk which carries the feeding spout *d* adjustable, so that it may be turned in either direction to facilitate the "spouting" or feeding in of the grain to be cleaned and separated, substantially as described.

No. 48,891.—J. W. BARNUM and PETER M. MCNOAH, Detroit, Mich.—*Vessel for Holding Petroleum.*—July 25, 1865.—This invention consists of a barrel composed of sheet-iron, coated on one or both sides with lead. The joints are secured by means of rivets and made air-tight by soldering.

Claim.—The employment or use of sheet-iron, coated wholly or in part with lead, for making vessels for holding petroleum or other volatile liquids.

No. 48,892.—CALEB BATES, Kingston, Mass.—*Drill for Boring Wells.*—July 25, 1865.—This invention consists of a drill for boring artesian wells, in which the cutters are placed at an angle with the axis of the stock, so as to give an angular stroke. The said stock is provided with vanes, also set angularly, for the purpose of giving partial rotation to the drill by means of the resistance of debris. Said vanes are also armed with surfaces of glass or other suitable material to protect the sides thereof.

Claim.—First, in drills for boring oil and other wells, protecting their sides from abrasion by means of a vitreous or equivalent surface placed in the ends of the arms or vanes on the drill stock, or elsewhere on the stock, substantially as above described.

Second, the use of leading cutters S, for splitting the rock, in combination with the wide-cutting surface R R, substantially as described.

Third, setting the cutters of the drill at an angle with the axis of the drill stock, substantially as and for the purpose described.

Fourth, in combination with a drill, adapted to operate as described, the swivel M, constructed and applied in the manner and for the purposes specified.

Fifth, feeding the rope of the drill automatically, by means substantially as above described.

No. 48,893.—ISAAC A. BEALS, Middleboro', Mass.—*Washing Machine.*—July 25, 1865.—This invention consists in the combination of two reciprocating and connected dashers and an upright grating, and a rack and segment gear for operating the dashers.

Claim.—The combination and arrangement of the two reciprocating and connected dashers C D, and the upright grid B applied to the tank.

Also, the combination of the same, and mechanism, as described, for operating the two dashers.

No. 48,894.—WILLIAM BEATON, Grinnell, Iowa.—*Washing Machine.*—July 25, 1865.—This invention consists in applying the power of a spring with other gearing similar to clock-work, in combination with rubbers, for washing clothing.

Claim.—The combination of the reciprocating rubber B, presser bar C, springs D, pitman E, crank shaft F G, gearing H I L M, shafts J N, spring Q, and escapement R S T, all constructed, arranged, and operating as and for the purposes specified.

No. 48,895.—WHEELER BEERS, Bridgeport, Conn.—*Axles for Vehicles.*—July 25, 1865.—This invention consists in the application of spiral springs to the axle, whereby the wheel is allowed to yield or give on the axle in either direction, towards or from the body of the vehicle.

Claim.—The application of the springs to an axle, in connection with the tube or thimble, the circumferential projection in the interior of the box, and the nut on the outer end of the axle, substantially as and for the purpose set forth.

No. 48,896.—JOHN BIBBY and ALLEN LAPHAM, Brooklyn, N. Y.—*Stills for Distilling Petroleum.*—July 25, 1865.—This invention consists of a still, through the centre of which passes the chimney. Inside the still are two perforated conical plates, the edges of which reach nearly to the sides of the still, and are suspended directly over the annular gutters. The lighter vapors pass over through the goose neck into the condenser, and the heavy vapors are condensed on the plates and drawn off through pipes.

Claim.—First, the elevated exit chamber C, in combination with the chimney or flue B, which passes through the centre of the still, substantially as and for the purpose herein set forth.

Second, the perforated cone or dome-shaped plates E, and gutters F F, applied in combination with each other within a still, substantially as and for the purpose herein specified.

No. 48,897.—F. M. BLODGETT, Boston, Mass.—*Spring Gaiter.*—July 25, 1865.—Springs are attached in the usual manner to the flaps of gaiters, after which the staple is forced through the cloth and through proper openings on the springs and fastened on the under side, preserving the cloth intact, except the small holes on both sides for admitting the prongs of the staple.

Claim.—The mode herein described of applying the staples of gaiter fastenings to the flaps of the gaiters.

No. 48,898.—MAURICE BRUNE, New York, N. Y.—*Apparatus for Preserving Food for Transportation.*—July 25, 1865.—This invention consists of a box composed of sections, each section being made hollow and filled with saw-dust or charcoal. The sections are joined together by tongues and grooves, a piece of rubber or other material being placed between each tongue and groove to make the joint tight. The sections are secured together by means of screw bolts. Within the box thus formed and supported by the framework

are boxes which are to be filled with ice. The parts are put together in such a manner that they may be readily separated and packed away when not in use.

Claim.—The combination and arrangement of the several parts, substantially as and for the purposes described.

No. 48,899.—C. H. BRYAN, Racine, Wis.—*Car Platform Stake Holder.*—July 25, 1865.—This invention consists in a mode of attaching car stakes to cars whereby the same may be easily turned down when desired without being raised up out of their sockets, a thing difficult to do when the load upon the car presses hard upon the stake.

Claim.—First, the combination of the stake A, provided with the hole *a*, with the bolt D, and nut E, arranged and operating substantially as and for the purposes specified.

Second, in combination with the above the employment of the jaws *c*, arranged and operating as shown and described.

Third, the combination of the stake A, socket B, jaw C, bolt D, and nut E, arranged and operating substantially as and for the purpose specified and shown.

No. 48,900.—W. W. BURSON, Rockford, Ill.—*Grain Binder.*—July 25, 1865.—This invention does not admit of a brief description. The claim indicates the nature of the improvements.

Claim.—First, the arrangement of the jointed arm A with the groove O, to hold the band material perpendicular and out of the way of the gavel, substantially as described and for the purposes set forth.

Second, the combination and arrangement of lever T with cam groove P and spool R, substantially as described and for the purpose set forth.

Third, the combination of lever U, cam collar S, and pitman W, with tightening cord J, substantially as described and operating for the purpose set forth.

Fourth, the combination of the hook *a* with shaft D and groove E, constructed substantially as described and operating for the purpose set forth.

Fifth, the combination of hook *a* and *b*, constructed and operating substantially as described.

Sixth, the combination of hook *c*, provided with the cutting point *d'*, with the receptacle plate *m*, having the cutting edge *b'*, operating substantially as described and for the purpose set forth.

Seventh, the combination and arrangement of the belaying point *h*, and recess of receptacle plate *m*, with hooks *a* and *b*, operating for the purpose set forth.

Eighth, the projecting blocks *f* and *f'*, on alternate sides of the opening in the platform M, operating for the purpose set forth.

Ninth, the combination of latch *n*, lever *o*, and forearm A', constructed substantially as described and operating for the purpose set forth.

No. 48,901.—A. S. CAMERON, New York, N. Y.—*Balanced Slide Valve.*—July 25, 1865.—This invention consists in combining with the valve one or more rollers and a diaphragm which is exposed to the action of the steam and curved by the steam to bear on the rollers and to hold them down upon the back of the valve, thus preventing the steam as it enters upon the under side of the valve from raising it from its seat. The chamber above the diaphragm is supplied with steam through a passage made through one of the walls of the steam-chest which communicates with the induction port.

Claim.—First, the combination of the diaphragm C, and rollers D, and valve B, constructed and operating substantially as and for the purpose set forth.

Second, the arrangement of cogs or their equivalents at the ends of the rollers and corresponding toothed racks on the backs of the slide valve, substantially as and for the purposes described.

No. 48,902.—J. W. CARHARD, Cohoes, N. Y.—*Valve for Steam Engine.*—July 25, 1865.—The object of this invention is to render a conical plug valve balanced irrespective of a variable pressure of steam. Its novelty consists in a projection extending from the small end of the valve, a recess located in the head of the valve, a chamber located in the socket above the thick end of the valve, and recesses in the socket in combination with the valve.

Claim.—First, the lip or projection *e*, extending from the small end of the valve as and for the purposes set forth.

Second, the recess *f*, located at the head *b* of the valve, and communicating with the steam space of the valve through suitable channels, substantially as and for the purpose described.

Third, the chamber *h*, located in the socket A above the thick end of the valve, substantially as and for the purpose specified.

Fourth, the unequal thickness of the abutments on the steam and exhaust sides, whereby to give lead to the exhaust.

Fifth, the recess or recesses *k* in the socket, in combination with the valve, substantially as and for the purpose described.

No. 48,903.—JOHN CARROLL, Longacoming, N. J.—*Glass Furnace.*—July 25, 1865.—This invention consists in the construction and arrangement of three fire chambers for the purpose of exposing the parts to a more uniform heat, and in respect to two benches and side walls of a glass furnace; the upper surface of each bench being inclined downwards so that the pots may lean towards the wall.

Claim.—The combination and arrangement described of the three fire chambers H H and G in respect to the two benches B B and side walls D D of the furnace, for the purpose specified.

No. 48,904.—HENRY T. CARTER, Portland, Me.—*Valve Gear for Oscillating Engines.*—July 25, 1865.—This invention consists in the arrangement of a stationary link screwed to one of the columns in which the cylinder oscillates in combination with an arm extending from the valve stem in such a manner that, by the combined effect of this stationary link and the oscillating motion of the cylinder, the requisite reciprocating motion is imparted to the valve stem, and the valve is changed at the proper intervals to control the induction and eduction of steam to and from each end of the cylinder.

Claim.—The arrangement of the stationary slotted link *b*, projecting laterally from the standard *c*, arm J, valve stem I, and oscillating cylinder A, all as and for the purposes specified.

No. 48,905.—WILLIAM F. CASWELL, Raynham, Mass.—*Animal Trap.*—July 25, 1865.—A box open at the bottom and closed on top contains within it a spring-forked jaw held up by a suitable detent and bait trigger, which, when sprung, closes down just within the entrance, piercing and killing the animal on entering.

Claim.—The spring-jaw setting mechanism as constructed, with the wheel *t* and the rail or projection *m*, combined and arranged with the tripper D′, the latch *e*, and the bait trigger, applied together as set forth.

No. 48,906.—LEWIS A. CAUVET, New York, N. Y.—*Insulators for Telegraph Wires.*—July 25, 1865.—This invention consists in constructing glass insulators for use on telegraph poles in such a way as that they can be secured to the poles in any position without the use of metallic or other attachments.

Claim.—Constructing glass insulators for telegraph wires with an internal screw thread, and securing them thereby to the bearings, bars, or pins of telegraph posts, substantially as above set forth.

No. 48,907.—GEORGE J. COLBY, Waterbury, Vt.—*Flooring or Dust Rack for Carpets.*—July 25, 1865.—This invention consists in making a framework of slats of wood in sections, with openings between the slats to allow the dust to fall below the carpet on to the floor.

Claim.—A portable flooring A to be laid under carpets, the same being made of bevelled slats secured together in sections, with suitable openings to allow the dirt and dust to pass through, as herein specified.

No. 48,908.—GEORGE J. COLBY, Waterbury, Vt.—*Window Shutter.*—July 25, 1865.—This invention consists in the employment of a curved, corrugated spring acting on the edge of a slat for the purpose of holding the section of movable slats in any desirable position.

Claim.—A curved, corrugated spring acting on the edge of a slat to hold the section of movable slats in any desirable position, as set forth.

No. 48,909.—GEORGE J. COLBY, Waterbury, Vt.—*Knob Latch.*—July 25, 1865.—The knob shaft is provided with a cam and combined with the convex plates on both sides of the door, and so constructed as to form the lever and fulcrum to operate the latch and bolt.

Claim.—The knob shaft and cam in combination with the convex plates on both sides of the door, so constructed as to form the lever and fulcrum to operate the latch or bolt as herein described.

No. 48,910.—SYLVANUS COLE, Pawtucket, R. I.—*Clothes Dryer.*—July 25, 1865.—This invention relates to a clothes-horse in which a series of vertical hanging frames are hinged to and revolve upon a common centre post or standard, and it consists in a method of hinging the same thereto so as to render it more substantial and not liable.

Claim.—The combination with the leather or other suitable flexible bands *h*, by which the cross rods of the swinging clothes frames are hung upon their common centre-post or standard, of the intermediate collar-plates *m*, made of metal or other suitable material, arranged together substantially as and for the purposes specified.

No. 48,911.—J. S. CORBIN, Ann Arbor, Mich.—*Bag Holder.*—July 25, 1865.—This invention consists of a fixed metal band bent in nearly a half circle, the ends being fast to the table, over which is a wire bail with a brace; the bail is also fastened to the table and above the band, and large enough in diameter to go over the band, and a space for the bag between it and the band. To the centre of the bail is attached a catch spring, which, when pushed down over the band, catches under the band and holds the bag fast.

Claim.—The combination with the fixed band *a* of the swinging frame *f*, when the latter is provided with the bent spring or arm *n*, and arranged to operate in the manner described.

No. 48,912.—S. W. CURTIS, Stoughton, Mass.—*Machine for Cleaning Flower Pots.*—July 25, 1865.—The nature and object of this invention are set forth in the claim.

Claim.—The mechanism for grasping and holding the pot, the same consisting of the movable jaws *d d*, their slide-bar B, the levers *e e*, the toggles *g g*, the lever *f*, the rack *h*, as specified.

Also, the combination of the water tank or tub A, with the apparatus for holding the pot and with that for cleaning it, as described.

Also, the combination of the slider *p*, its clamp *g*, with the slider *u*, the brush-lever *r*, and its pressure-spring *t*, and the cammed lever 4, the whole being arranged and so as to operate together, substantially as specified.

Also, the combination of the longitudinal adjusting carriage D and its clamping devices *k k l m* with the spindles C.

Also, the combination of the conical holder *b'* and the spring *c'* with the spindle C and the holding jaws *d d* and the brush *s*, and the mechanism for revolving the brush, as specified.

No. 48,913.—GIDEON G. DENNIS, Dover, N. H.—*Manufacture of Friction Matches.*—July 25, 1865.—This invention consists in applying the friction composition to both ends of the matches, and in cutting the matches in such a manner that they will be joined together in the middle by a partition of wood so narrow that it may be easily split when the matches are to be used.

Claim.—Arming or applying the igniting materials or composition to each or both ends of the match stocks or splints, so as to make each splint or stick serve for two lightings instead of one.

Also, making matches by cutting or sawing into each end of a block, card, or sheet of match material so as to leave the splint jointed at the middle, substantially as described, and then applying the igniting material or composition to both ends of the stocks or splints so made or formed.

No. 48,914.—J. C. DICKEY, Saratoga Springs, N. Y.—*Rock Drill.*—July 25, 1865.—This invention consists of one or more drill bits, of a length nearly equal to the diameter of a circular reamer, and by which they are surrounded, and from which they are made detachable.

Claim.—The combination of the drill A with the reamer C, substantially as described and set forth.

No. 48,915.—JAMES DODGE, Waterford, N. Y.—*Machine for Rolling Irregular Forms*—July 25, 1865.—In this machine the varying distance of one roll from the other is governed by one of two or more cams which bear upon the upper roll and move over it with a positive and uniform velocity precisely equal to that of the surface of the roll itself. The particular improvements claimed are, certain arrangements of mechanism, by virtue of which the insertion between the rolls of the bar to be wrought is the means of setting the cam in motion, while an adjustable stud upon the side of the cam, in combination with other devices, stops the movement of the cam at any predetermined moment.

Claim.—The mechanism for driving the said pattern or cam rollers or segment with a positive motion, that is, by gear, for starting the patterns or cams by the introduction of the article to be shaped, and for stopping the movement by the action of the machine itself, all substantially in the manner herein described.

No. 48,916.—JOHN EARNSHAW, Lowell, Mass.—*Flour Sifter.*—July 25, 1865.—This invention consists in the employment of a scoop, having a portion of its rear part made of wire gauze for a sieve, and a shaft with rubbers for forcing the flour through the sieve, the shaft being turned by a suitable crank.

Claim.—The combination of a sifting device with a flour or meal scoop, substantially as set forth.

No. 48,917.—WILLIAM EBERHARD, Sigourney, Iowa.—*Spinning Machine.*—July 25, 1865.—The funnel-shaped head has within it adjustable springs tapering down to the throat, their adjustment by screws graduating the size of the opening to that of the material to be fed through. The draw rollers are vertical, the spool is loose on its spindle, to which a flyer is attached, and a sliding rod and fingers give a traverse to the spool in winding.

Claim.—In combination with the feeding head and the drawing rollers, the spindles and spire, arranged and operated as set forth.

No. 48,918.—J. W. ELLS, Pittsburg, Penn.—*Annealing and Polishing Sheet Iron.*—July 25, 1865.—This invention consists in placing the sheets of metal to be operated on in an iron box or muffle, with layers of oxide of iron, lime, and animal charcoal between them, heating the whole to about eight hundred degrees in a suitable furnace, meanwhile subjecting the box to a rocking and rotating motion.

Claim.—Annealing and polishing sheets of iron by placing them in a tight cast-iron box or muffle, with scales or oxide of iron, animal charcoal, coke, lime, or other decarbonizing and cutting agents, and imparting sufficient motion to the box or muffle while in the furnace to agitate the sheets of iron to such an extent as will polish them by the attrition of the annealing and cutting agencies during the operation of heating and cooling, whereby they are given the peculiar mottled and polished appearance of Russia sheet iron.

No. 48,919.—JOHN FARRELL, New York, N. Y.—*Safe Lock.*—July 25, 1865.—The inner end of the knob arbor in this lock carries a flat disk which has a mortise in its edge for the reception, when in the right position, of an auxiliary bolt projected from the end of the lock bolt, and also an elongated slot, which embraces the pin projecting from the face of a sliding plate, to which the main locking bolts are attached. In operating the plate with its bolts it is first thrown out to lock the door of the safe by simply turning the knob, then the key is inserted in the lock and the bolt of the latter thrown out, which forces the end of the auxiliary bolt into the mortise in the edge of the disk, and thus the latter is locked and cannot be turned, and consequently the main bolts cannot be withdrawn until the auxiliary bolt shall have been withdrawn from the mortise.

Claim.—Combining the bolt or bolts by which the door is secured with the bolt of the lock, by a mechanism substantially such as described, operated by the lock bolt to lock the door bolt or bolts, and which, when violence is applied to the lock, will permit the lock bolt to separate from it without unlocking the door bolt or bolts, as set forth.

No. 48,920.—EDWARD A. FIELD, Sidney, Maine.—*Road Scraper.*—July 25, 1865.—This invention consists in the use of levers, to which wheels are attached to the hinder ends thereof, operated by the person sitting upon the scraper, in order to regulate the deposit of dirt at any desired spot upon the road.

Claim.—The combination and arrangement of the levers *i i* in, or the said levers and the wheels *t t* with, the road scraper composed of the sled and the scraping bar, or their equivalents, substantially as described.

No. 48,921.—ABRAHAM FITTS, Worcester, Mass.—*Steam Whistle.*—July 25, 1865.—This invention consists in the combination of two bells with an intermediate chamber, having an annular passage opposite the edge of each bell in such manner that, by admitting steam or compressed air to the chamber, both bells are sounded simultaneously, the object of which is to produce a sound of increased intensity. The bells are both upon one stem, and the steam chamber is located midway between them, the pipe for conveying the steam to the hamber passing through the lower bell.

Claim.—First, the combination of two bells with an intermediate chamber having an annular passage opposite the edge of each of the bells, substantially as and for the purpose set forth.

Second, combining in a whistle operated by steam or compressed air, two bells tuned so as to produce musical chords, substantially as herein described, for the purpose of increasing the intensity of the sound.

No. 48,922.—ADDISON C. FLETCHER, New York, N. Y.—*Bag Fastener.*—July 25, 1865.—This invention consists in a plate of metal with a projecting arm so formed as that the upright part of the arm is parallel with the body of the plate, and forming a slot between the plate and arm, the lower end of the plate curving out. There are two holes through the plate; the upper fastens the plate to the bag, and the other receives the cord when it is passed around the neck of the bag underneath the projecting part of the arm into the slot, and down and under the curved part of the plate at the bottom, securely fastening the neck of the bag.

Claim.—The fastening for bags and sacks constructed as herein described, and operating in the manner substantially as herein set forth.

No. 48,923.—D. P. FOSTER, Shelburne Falls, Mass.—*Cooking Stove.*—July 25, 1865.—This device consists of a movable frame provided with a horizontal shaft, upon which is placed a fire grate, which may be lowered or raised at will by the crank attached to the shaft.

Claim.—First, the fire box or grate A provided with the holes *c c c*, or their equivalents, in combination with the slotted frames B, constructed and arranged to operate substantially as and for the purpose herein set forth.

Second, the movable stand composed of the end pieces B B, united by the bar J, in combination with shaft F, pinion E, ratchet H, and pawl I, for the purpose of supporting and adjusting the grate A, as and for the purpose described.

No. 48,924.—HENRY FRENDENBERG, New York, N. Y.—*Hoop Skirt.*—July 25, 1865.—This invention will be understood from the claim.

Claim.—The spiral wire in combination with the tubular web, substantially as and for the purpose described.

No. 48,925.—Samuel S. Garver, Hamilton, Ohio.—*Shutter Lock.*—July 25, 1865.—This invention consists principally in the combination and arrangement of well-known devices, the bolt being operated by a toothed wheel or segment thereof playing in rack teeth in the lower edge of the bolt. The wheel is turned by means of a key inserted in a hole in the centre or hub thereof.

Claim.—The door or shutter lock herein described, consisting of the case A, rack bolt B, pinion or segment C, projection *e*, notch *f*, and friction spring D, all constructed and arranged substantially as and for the purpose specified.

No. 48,926.—Henry A. Gilman, Buffalo, N. Y.—*Railroad Car Rail Coupling.*—July 25, 1865.—This invention consists in the combination of a base plate with a clamping bar and tightening wedges, by which the contiguous ends of two railroad rails may be coupled together in a manner to give them both a vertical and lateral support, and prevent the possibility of one rail getting out of line with the other.

Claim.—The combination of the base-plate A and clamping bar C, and tightening wedges D, or equivalents thereof, for the purposes and substantially as described.

No. 48,927.—Victor Giroud, New York, N. Y.—*Register for Counting Revolutions.*—July 25, 1865.—This register is intended to subserve the function of denoting the number of revolutions made in a given time by any shafting of machinery. It is more especially designed for marine engines. The shaft, when revolutions are to be counted, is provided with an eccentric which oscillates a lever which actuates certain pawls which operate similarly to the escapement of a clock, turning toothed wheels by the space of one tooth at each revolution of the shaft. These wheels register the number of revolutions.

Claim.—The arrangement and combination of the ratchets *b*, pawls I, toothed wheels *a d*, notched wheels *c*, and the single toothed disks *e*, applied respectively to the heads or collars E, wheels F G, and shaft I′, to operate in the manner substantially as and for the purpose specified

No. 48,928.—John Gorton, Providence, R. I.—*Gauge for Setting the Pitch to Wagon Axles.*—July 25, 1865.—This invention consists in a frame upon which are raised two standards that support the axle in a horizontal position. At one end of the frame, and attached to an upright, is an adjusting device, consisting of a top bar, a sliding set with a set screw, and an adjusting screw at the end of the bar, so that by the use of another gauge, which has a bar that will fit to the line of the boxes in the hub touching the upper sides and an arm with a pivoted plate to set to the face of the vertical spoke, and then transfer this gauge thus set to the frame, and adjust the bearings of the axle rest to suit this gauge, which will determine the set of spindle of the axle.

Claim.—The adjustable gauge, described as figure 2, or its equivalent, in combination with the machine described as figure 1, or its equivalent, the whole substantially as described, for the purposes as set forth.

No. 48,929.—W. P. Gregg, Boston, Mass.—*Roller Skate.*—July 25, 1865.—This invention consists in a stock having a small supporting roller under each end, and a large driving roller on each side.

Claim.—A roller skate constructed with a stock having a small supporting roller under each end, and a large driving roller on each side, substantially as described.

No. 48,930.—Ira T. Halstead.—Fredonia, N. Y.—*Amalgamator.*—July 25, 1865.—This invention consists of a tub, within which revolves a muller, which is attached to the yoke. A concave disk fits loosely around the yoke, and is supported by a shoulder in the side of the tub. The disk is provided with apertures, and settles upon the top of the concave disk, whence it is returned again to the tub through the centre.

Claim.—A concave disk, provided with openings at the sides and in its centre, in combination with a muller revolving in a tub with a flat or concave bottom, substantially in the manner and for the purpose set forth.

No. 48,931.—F. G. Harding, Boston, Mass.—*Boot-blacking Case.*—July 25, 1865.—This invention consists in arranging within the seat of a chair a foot rest, and a receptacle for brushes and blacking for cleaning boots and shoes.

Claim.—The combination of the chair *a*, hinged seat *b* and foot rest *g*, arranged as herein specified, for the reception and use of boot-blacking appliances.

No. 48,932.—John G. Harper, New York, N. Y.—*Gas-lighting Device.*—July 25, 1865.—This invention consists of a case or jacket, provided with a lamp for burning oil or other suitable material, and having an aperture made in it in such a relative position with the wick tube of the lamp as to admit of the said case being applied to a gas burner to ignite the gas issuing from the same.

Claim.—A case or jacket provided with a lamp for burning oil or other suitable material, and having an opening or aperture made in it, in such a relative position with the wick tube of the lamp as to admit of the case or jacket being applied to a gas burner to ignite the gas issuing therefrom, substantially as set forth.

No. 48,933.—M. HARRIS and R. G. BUSH Jamestown, N. Y.—*Wringing Machine.*—July 25, 1865.—Rubber rollers are arranged upon shafts which have their ends extended and constructed in such a manner that the handles can be applied to each or both, when the said rollers or shafts are used in a frame, for the purpose of wringing clothing.

Claim.—The arrangement of rubber rollers upon shafts which have their ends extended and constructed so that handles can be applied to each or both when said rollers and shafts are used in a frame, for the purpose of wringing clothing, as is herein fully set forth.

No. 48,934.—BARNEY HART, Washington, D. C.—*Apparatus for Washing Tumblers.*—July 25, 1865.—This invention consists in the arrangement of perforated pipes supported by brackets. A suitable grating is arranged above the pipes, on which the tumblers are placed bottom upwards; water is forced into the pipes, and jets of water are thrown up for washing the tumblers over a proper trough or tub.

Claim.—The arrangement and combination of the apparatus with the water pipes and grating above, by which a continual jet of water is projected into each tumbler or glass so as to cleanse and rinse the glass completely as herein described.

No. 48,935.—HERMAN HAUPT, Cambridge, Mass., and J. Y. SMITH, Alexandria, Va.—*Construction of Flat-bottomed Boats.*—July 25, 1865.—This invention consists in the construction of flat-bottomed boats of straight timber, running longitudinally, for the bottom and sides.

Claim.—The construction of boats or barges, substantially in the manner and for the purposes herein set forth.

No. 48,936.—F. X. HAZMAN and L. L. ARNOLD, New York, N. Y.—*Cigarette Paper.*—July 25, 1865.—This invention consists in applying to one side of the paper a composition of gum-arabic, dextrine, gluten, starch flour, and saltpetre. This composition causes the paper to shrink and curl up, and also serves to hold the cigarette together.

Claim.—First, the manufacture of cigarette paper coated on one side with an adhesive substance, dried, and whether the same is applied to the whole surface or to the margin only.

Second, the manufacture of cigarette paper coated on one side with a substance which, when dried, shall shrink so as to give the paper a tendency to curl.

Third, the employment of the ingredients compounded in the proportions and manner herein described, for a mucilage or paper coating, for the purpose set forth.

No. 48,937.—WM. O. HEADLEY, Newark, N. J.—*Trunk Caster.*—July 25, 1865.—This invention consists in combining a trunk, a caster and a bracket, so that the device may be cheaply manufactured, and be very strong and durable, and serve as an efficient protection for the angles of the trunk, and at the same time admit of the trunk being readily moved or rolled about.

Claim.—A combined bracket and caster for trunks, when the former is cast with an exterior projection or projections *c*, and with lugs or projections *d d* at the inner surface of one of its arms *a* by the side of the opening *b*, which receives the caster or roller B, and on lugs or projections the axis of the caster or roller is fitted, substantially as described.

No. 48,938.—G. W. HEALD and L. D. CISCO, Baldwinville, N. Y.—*Rotary Pump.*—July 25, 1865.—The water is drawn in and forced from the centre to the periphery by centrifugal action, the arms through which it passes being united at their outer enlarged delivery ends a complete circle, thus excluding water from the hub, and thereby relieving the arms from such resistance.

Claim.—The construction of the piston B, consisting of the rim *b*, and hollow arms *c c*, arranged and operating substantially as and for the purpose herein set forth.

No. 48,939.—WM. HEMMER, Newark, N. J.—*Table or Desk.*—July 25, 1865.—The object of this invention is to construct a table whose top can be raised at various angles and heights, so as to provide a desk on which to write or draw that will suit different persons either sitting or standing, and it consists in the use of a number of supporting frames or legs, so arranged that each will give to the top of the table a different height and inclination.

Claim.—First, connecting the boards D C and B together, as described and for the purpose specified.

Second, the arms or frames E F connected to the board C, substantially in the manner and for the purposes herein specified.

Third, the frame or rest *a*, in combination with the frame E, substantially as described.

Fourth, thumb-screws or screw rods *b* and *d*, in combination with the frames E and F, substantially as described.

Fifth, the combination and arrangement of all the parts, substantially as herein shown and described.

No. 48,940.—JONAS HIGBEE, Northport, N. Y.—*Rudder.*—July 25, 1865.—A recess is provided in the ship at the head or stern, or both. The rudder is so constructed and shaped.

that it can be turned freely into its recess, completely filling it and preserving unbroken the water lines of the vessel; for further use the rudder can be turned out, then acting as a common rudder.

Claim.—The applying of rudders to vessels either at the bow or stern, or at both said places, in the manner substantially as shown, so that the rudders will be capable of being reversed, turned outward from the recess or openings *a* when necessary, as when used as a stern rudder, or turned inward so as to fit in said openings when used as a bow rudder, as set forth.

No. 48,941.—PETER and FREDERICK HINKEL, New York, N. Y.—*Apparatus for Cooling Liquids.*—July 25, 1865.—This apparatus consists of a pipe of suitable metal, which is introduced through the bung hole of the vessel containing the liquor to be cooled, and serves also as a stopple. The lower end of this pipe is closed. At its upper end it is connected with a vessel containing crumbled ice. This vessel is surrounded with charcoal or some other non-conductor of heat, and is so constructed as to allow of a regular sinking of the ice into the pipe, whereby the cooling of the liquor surrounding the pipe is effected.

Claim.—The mode of refrigerating beer and other beverages herein fully described, and for the purpose set forth.

No. 48 942.—SAMUEL LITTLE, Detroit, Mich.—*Watch.*—July 25, 1865.—This invention consists in the use of a movable hairspring stud, in combination with the hairspring of a watch, in such a manner that the watchmaker is enabled to get a correct beat in a short time, and with little trouble. In connection with this movable hairspring stud an undulating spring is used for the purpose of overcoming the effect of the atmosphere on the hairspring, and of keeping the watch in beat. This invention consists finally in an undulating spring attached to the regulator in such a manner that the effect of the atmosphere on the balance is overcome, said regulator being connected directly to the hairspring

Claim.—First, the curved spring *d*, in combination with the movable studs *a* and hair spring *b*, constructed and operating substantially as and for the purpose described.

Second, the curve spring *k*, in combination with the regulator *j*, spring *b* and balance *h*, constructed and operating substantially as and for the purpose specified.

No. 48,943.—SAMUEL HODGINS, St. Louis, Mo.—*Boot Heel.*—July 25, 1865.—The object of this invention is to obviate the running down of the heel of a boot or shoe, caused by the wearing away of one part sooner than the other, and it consists in the employment, in the heel of a boot or shoe, of a metallic plate, extending, either wholly or in part, down to the treading surface of the heel, said plate being bent round so as to correspond with the shape of the heel, and the said plate having its inner or upper end bevelled in such a manner that a correspondingly bevelled plate, arranged over the same in the heel of the boot, may be caused to force it out by means of a set screw, or any other suitable device, and which may be retained in position when set.

Claim.—The adjustable plates B and C in combination with the heel of a boot or shoe, arranged to operate in the manner and for the purpose herein specified.

No. 48,944.—J. HOLLINGSWORTH, Chicago, Ill.—*Horse Rake.*—July 25, 1865.—This invention consists in constructing the tooth with a transverse eye arranged at right angles to the plane of direction of the tooth, and also in the arrangement and combination of various other parts, indicated in the claim.

Claim.—First, a scroll rake tooth, constructed with the transverse eye *c* arranged relatively thereto, substantially as herein described and represented for the purpose set forth.

Second, the arrangement of the scroll teeth upon a continuous head or bar E, which is hung to the axletree A in such manner that they enter grooves in the head E, so as to be stayed laterally and pass under the head E, and at the same time are susceptible of being removed and replaced independently of one another, substantially as herein described and shown.

Third, the arrangement of the foot and hand lever G G, adjustable goose-neck brackets *a a*, oscillating head E, and axletree A, in the manner and for the purpose described.

Fourth, the arrangement of the rod J, forked lever *l*, spring *s*, pulley *k*, chain or cord *i*, goose-neck brackets *a a*, head E, and foot and hand levers G G, substantially in the manner and for the purpose described.

Fifth, the arrangement of the hand and foot lever directly on the rake head E, which is hung in goose-neck brackets *a a*, substantially in the manner described.

Sixth, the combination of the goose-neck brackets *a a*, slide rod J, and rake-head E, in the manner and for the purpose described.

No. 48,945.—J. W. HOLLOWAY, Akron, Ohio.—*Piston Packing.*—July 25, 1865.—This invention consists in the combination of a central solid ring with two cut side rings and a circular spring placed under the outer edge of the cut rings, and having at the same time against the piston head a follower. The office of the circular spring is to keep the cut ring

at all times in contact with the inner surface of the cylinder, while the rings are held in contact with each other by steam, which enters the space between them and the follower or piston-head.

Claim.—The bevelled rings *b b* and circular springs *c c* in combination with the solid ring D D, when arranged and operating substantially as and in the manner described.

No. 48,946.—W. C HOOKER, Abingdon, Ill.—*Machine for Trimming Hedges.*—July 25, 1865.—This invention consists in constructing a suitable frame, intended to stand over or straddle the hedge, and in arranging on said frame a cutter on the one side and a block, against which to cut, on the other side, both having a swinging motion, and capable of being moved forward and backward the length of the frame, as occasion may require, during the cutting operation.

Claim.—A machine for trimming hedges, constructed substantially as herein shown and described.

No. 48,947.—JAMES A. and HARRY A. HOUSE, Bridgeport, Conn.—*Lawn-mowing Machine.*—July 25, 1865.—This invention consists of a finger beam of a sled-shape, so as to run easily over the ground, to which is attached a scalloped cutter. From the rear of the finger beam projects a single beam, and on this is mounted a cam wheel, operated by a crank. This cam wheel is embraced by a bar connecting with the scalloped cutter, and thus a vibrating motion is imparted to the latter.

Claim.—The combination of the finger beam frame, vibrating cutter, cam gear, and breast piece, arranged and operating substantially in the manner described for the purpose set forth.

No. 48,948.—JOSEPH J. ILLINGWORTH, Brooklyn, N. Y.—*Cleaning Tubes in Boilers.*—July 25, 1865.—The object of this invention is to clean the flues and tubes of steam generators by a current of steam being passed through them. Its novelty consists in the employment of a nozzle and flexible pipe applied to the said flues and tubes.

Claim.—The nozzle E *b* and flexible pipe D, applied substantially as herein described, for cleaning flues or tubes of steam boilers.

No. 48,949.—E. S. JEWETT, Lima, Mich.—*Broadcast Seeding Machine.*—July 25, 1865.—Upon the axle, carrying a rotary cylinder with seeding slides, is arranged a sleeve, connected by pivoted arms to each seed slide arm, all operated by means of a hand lever.

Claim.—The adjustable sleeve E in combination with the seed slides D, revolving cylinders A, and hand lever F, constructed and operating in the manner and for the purpose substantially as herein shown and described.

No. 48,950.—E. JOHNSON, Jr., Cleveland, Ohio.—*Skate.*—July 25, 1865.—This invention consists in a special arrangement of devices, by means of which vulcanized rubber springs are interposed between the runner and stocks. The inventor does not claim broadly the use of springs, but merely the arrangement of devices for confining and operating the springs, so as to give an easy and natural movement to the wearer.

Claim.—The standards A A′ *a a′*, plates C G, springs F *f*, flanges or guides *h h*, and shank *e*, when the several parts are arranged as herein described and operating as specified.

No. 48,951.—WILLIAM W. JOHNSON, Harrison, Me.—*Road Scraper.*—July 25, 1865.—This invention consists in the adjustability of a road scraper by means of levers, which hold in position, and upon elevating it, release the dirt contained in it. The claims and drawings illustrate clearly the mode of operation.

Claim.—The combination and arrangement of the vibratory scraping board with the axle and its wheels, the furcated tongue, and the mechanism for regulating the inclination of the scraping board, as specified.

Also, the combination of the side wings or plate *c c* with the vibratory scraping board, applied to and arranged with an axle to its wheels and tongue, as specified.

Also, the combination of the stop *g* and the bar *d* with the furcated tongue and the vibratory scraping board, applied to an axle and wheels, and having a mechanism, as described, or equivalent, for varying the inclination of the board, as set forth.

No. 48,952.—CHARLES KATHAN, Hardin, Iowa.—*Stove-pipe Damper.*—July 25, 1865.—Two revolving disks, with similar apertures through them, are arranged one on each side of the central frame, and moved by a lever, with handle on outside of pipe, so as to regulate the size of the openings. The whole damper revolves on a central axis, and may be set horizontally or at any desired angle.

Claim.—The revolving disks B B, arranged to operate in connection with the central portion or frame A, of a damper for stoves and other heaters, substantially as herein specified.

No. 48,953.—EDWARD KELSEY, Centre Brook, Conn.—*Paper-knife Handle.*—July 25, 1865.—This invention consists in securing the handles to the blades of paper knives by means of a dowel pin inserted within and across the joint of the contiguous ends of the handle and the knife-blade shank of the inclined grooves or channels.

Claim.—The combination with a dowel pin, inserted within and across the joint of the contiguous ends of the handle and the knife-blade shank, of the inclined grooves or channels, substantially as herein described and for the purpose specified.

No. 48,954.—W. J. KETCHAM, Washington, D. C.—*Mode of Receiving and Delivering Mails, &c.*—July 25, 1865.—The object of this invention is to deliver, and at the same time receive, a mail bag or package at the station without requiring the agency or attention of any one at the time the change takes place.

Claim.—Receiving and delivering upon lines of railroad communication mails and packages by means of devices connected to the railway car, and operated at the several points of delivery, in the manner herein described.

No. 48,955.—J. D. KING, Cincinnati, Ohio.—*Machine for Pressing Tobacco.*—July 25, 1865.—This invention consists in the employment of a series of rollers placed loosely upon a shaft, provided with adjustable bearings, in combination with a reciprocating bed, provided with removable boxes or troughs of the same width as the rollers.

Claim.—The employment or use of a series of rollers K, placed loosely on a shaft I, provided with adjustable bearings, in combination with a reciprocating bed C, provided with a series of removable boxes or troughs G, corresponding in width to the rollers, substantially as and for the purpose set forth.

No. 48,956.—C. A. KIRKPATRICK, Somerville, Mass.—*Paddle Wheel.*—July 25, 1865.—This invention relates to a paddle wheel, the buckets of which are made each of a series of movable shutters or slats, similar to an ordinary window-blind, in such a manner that the said slats can be turned edgewise as they descend in and rise out of the water, and to close up while passing through the water in a position to offer a very extended working surface to the water.

Claim.—First, the combination of the movable slats with the cam slot, when arranged and operating as and for the purpose specified.

Second, the adjustable gates, applied in combination with the cam slot and movable slats, in the manner and for the purpose described.

Third, the combination of the double ratchet, double cam, and movable gates, all constructed, arranged, and operating as herein described, to constitute an automatic reversing gear.

No. 48,957.—HOMER W. KNOWLTON, Saratoga Springs, N. Y.—*Horse Chain.*—July 25, 1865.—This invention relates to an improvement in the T-end of a horse chain, which is fitted in a ring of the latter in order to attach the chain of a halter to a post or other fixture, or which is fitted in the ring of a bit, in order to attach the horse to the post.

Claim.—Constructing the T-ends of horse and other chains with a joint in their shanks, to operate substantially as and for the purpose herein set forth.

No. 48,958.—TOBIAS KOHN, Hartford, Conn.—*Device for Finishing Threads.*—July 25, 1865.—By making the rollers of decreasing diameters towards their centres the coil of thread is forced more effectually into rubbing contact with itself, and the alternately opposite inclination of the rollers overcomes and neutralizes any tendency of the thread to run to either end of the roller.

Claim.—First, the described concave-faced rollers, on which to wrap the threads to be finished by the longitudinal motion of the carriage on which the rollers are mounted.

Second, placing the alternate rollers on axis at or nearly at right angles to each other, so as to partially counteract the tendency of the thread to traverse lengthwise the rollers.

No. 48,959.—FREDERICK C. LEFFLER, Highland Township, Iowa.—*Cultivator.*—July 25, 1865.—In this machine the draught is applied to a rectangular frame, pivoted at the rear to the rear cross-bar of the cultivator, and in front it is pivoted to the upright parts extending from the wheels. The fastening is adjustable vertically.

Claim.—The draught bars L, attached to the rear bar E by pivots *e* and uprights *f*, and secured to the upright bars A by a rod G, substantially as and for the purpose set forth.

No. 48,960.—GEORGE LIMING, Roxbury, Mass.—*Sash Fastener.*—July 25, 1865.—This invention consists in arranging upon the side of the window frame a cam with a pointed end, which pointed end when turned downward will prevent the window frame from being raised, and when turned upward the cam holds the sash from falling down.

Claim.—The improved sash fastener, with the cam and spur, formed and operating as described.

No. 48,961.—A. LEITCH, Ryegate, Vt.—*Sap Spout.*—July 25, 1865.—This invention consists in lining the spout with metal, so as to obviate the injurious effects of the metal on the trees.

Claim.—A sap spout, made of an outer wooden tube, enclosing a metallic tube, substantially as and for the purpose above described.

No. 48,962.—F. C. LEYPOLDT, Philadelphia, Penn.—*Button-hole Cutter.*—July 25 1865.—A detachable bed plate, held in position by lateral guards, is rendered adjustable in relation to the line of the descending knife by means of a convexity beneath it, on which it vibrates, to adapt itself to the knife from the first moment of contact until the complete incision is made.

Claim.—The described improvement in instruments for cutting button-holes, consisting in the use of the self-adjusting block B, when the same is constructed in relation to the knife C, substantially as and for the purpose herein set forth.

No. 48,963.—D. S. LOY, Graceham, Md.—*Tuyere.*—July 25, 1865.—This invention consists in furnishing the cover of the tuyere box with an opening, on which is a cap, closed at the top and three sides but open on the fourth side, causing the blast to be deflected towards that side in passing therefrom, and by this means, and by changing the position of the cover, the blast can be thrown in any direction required.

Claim.—The blast plate C, having a deflected slit opening, and capable, by change of position, of directing the blast in the direction required, as described and represented.

No. 48,964.—W. S. MARSH, Indianapolis, Ind.—*Skiving and Splitting Machine.*—July 25, 1865.—This invention consists of a series of devices, indicated in the claim and shown in the engraving.

Claim.—The inclined slide plate D, the adjustable roller L, placed over the knife, with its boxes K K and rods P P, and the springs J J, all in connection with the knife B.

Also, the check rib O and set-screw H, all arranged and operating substantially as and for the purpose set forth.

No. 48,965.—JOHN MASSEY, New York, N. Y.—*Meat Chopper.*—July 25, 1865.—This invention consists of a horizontal reciprocating travelling platform or box, in which the meat or other material to be chopped is placed, in combination with cutter blades, operated by suitable gearing.

Claim.—The combination of the horizontally reciprocating platform *f f* and driving devices, consisting of the shaft *q*, cog-wheel *p*, pins *n* and groove *m*, with the knives *n' n' n'*, jointed connecting rods *g' h'*, and crank shaft *'b*, arranged to operate in the manner and for the purposes specified.

No. 48,966.—EDWARD MAYNARD, Washington, D. C.—*Cartridge Retractor for Breech-loading Fire-arm.*—July 25, 1865.—This appendage is applicable only to those breech-loading arms which have the barrel pivoted to the stock and tilted upward at the breech by the action of the trigger guard lever, and the device consists in having the link connecting the lever to the rear end of the barrel provided with a small shoulder or projection, which engages with a sliding retractor, when the barrel is sufficiently tilted to allow the cartridge freely to escape from its chamber.

Claim.—The combination of a retracting slide B with the barrel A and curved link C, of an improved breech-loading fire-arm, substantially in the manner and for the purpose herein set forth.

No. 48,967.—E. MCKINNEY, Middletown, Penn.—*Apparatus for Burning Petroleum.*—July 25, 1865.—The petroleum, crude or refined, is introduced through pipes controlled by stop-cocks, passing through any proper refrigerating medium into the place of combustion, and there mixed with a refractory material, pulverized plumbago or the like, and drawn to its surface by capillary attraction, and then burned.

Claim.—The method herein described of generating heat and light from the combustion of petroleum or other hydrocarbon, crude or refined, by introducing it through pipes controlled by stop-cocks passing through any proper refrigerating medium, to keep said pipes cool, and prevent the transmission of the generated heat to the reservoir of oil into the place or places of combustion, and there mixing it with a refractory material pulverized, so that the pipes are protected from the fire, the oil being supplied in such quantity as merely to saturate the mass of material with which it is mixed, and being drawn to its surface by capillary attraction, substantially as above set forth.

No. 48,968.—HENRY A. MEAD, Cuba, N. Y.—*Carpet Stretcher.*—July 25, 1865.—This stretcher consists of a hand lever, having teeth in one of its ends of proper size and shape to take hold of the carpet, and of a toothed foot-plate, attached to the lever by means of a connecting rod or chain, so that by pressing upon the foot-plate with sufficient force to insert its teeth into the carpet, and then placing the lever by its toothed end upon the same as far from the plate as the connecting chain will allow, and pressing the lever away from the foot-plate, the latter will be drawn toward the former, drawing the carpet with it. When the carpet has been drawn far enough, the foot-plate is fastened to the floor by means of its teeth, and the carpet may then be nailed.

Claim.—The combination of the hand lever *b* and foot-plate *n*, constructed, arranged, and operating together, substantially in the manner described and for the purpose specified.

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